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ADVANCED DECOY TECHNOLOGY PROGRAM ADTECH IV FINAL REPORT (U)

APPENDIX I, PART II PROGRAM DESCRIPTION--OPTIMUM DECOY DESIGN PROGRAM

Prepared by

AVCO GOVERNMENT PRODUCTS GROUP MISSILE SYSTEMS DIVISION 201 Lowell Street Wilmington, Massachusetts 01887

AVMSD-0465-68-RR, APP. I Contract F04701-68-C-0012

June 1969

Sponsored by

Advanced Research Projects Agency
Department of Defense
ARPA Order No. 441, Amendment No. 12

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Prepared for

SPACE AND MISSILE SYSTEMS ORGANIZATION
DEPUTY FOR REENTRY SYSTEMS
AIR FORCE SYSTEMS COMMAND
Norton Air Force Base, California 92409

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by

R. A. MacFarlane E. R. Nickerson

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UNCLASSIFIED ABSTRACT

- (U) This technical report describes analyses and techniques used in the design and evaluation of advanced decoy concepts. The work described addresses both the design of specific penetration aid elements and the formulation of techniques for their evaluation.

 The three major technical areas covered in this report are:
 - 1. Investigation of a penetration aid technique that degrades the measurement capability of the radar sensor.
 - 2. The design of a computer program to solve the decoy design problem with flexibility in the selection of optimization criteria and constraints.
 - 3. Studies of the use of certain discrimination techniques for a hard point defense system.

This appendix to this report contains detailed description of the optimum decoy design program.



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4. Numerical Procedure

First the coefficient counter M and the accumulator ANS are initialized to zero. Then ITP is tested. If ITP is greater than one, statement 10 is executed next, setting NAZU equal to NAX and control then goes to statement 30. In this case, a polynomial in the three unknowns X, Y and Z will be evaluated. If ITP is less than or equal to 1, statement 20 is executed next where NAZU is set equal to 1 and statement 30 is reached. In this case, the polynomial will be a function of only two unknowns X and Y.

At statement 30, the DOloop ending at statement 130 is entered to perform the calculations needed to evaluate the polynomial. The value of this polynmial is returned to MISC in the variable ANS. When the evaluation is complete, the RETURN statement following 130 is executed, returning control to MISC.

5. Other Information

- A. POLCAL is called by SUBROUTINE MISC only.
- B. PØLCAL does not call or reference any other subprogram.

4.0 COMPARISCN OF DECOY WITH REENTRY VEHICLE

Comparison of the Decoy with Reentry Vehicle

The comparison of the decoy with the reentry vehicle consists of the evaluations of certain differences and the determination of integrals of special functions. SUBROUTINE F123 performs the difference calculations using SAVEDV to store the values, before calling INTGRL. SUBROUTINE INTGRL evaluates the integrals using in the process FUNCTION ADD, and subroutines INFCOF, INTERP, LINFIT, and WRITEM. F123 also calls in subroutines HEADER AND TIMERS. These integrals include the corridor functions user to constrain the decoy within specified corridors and the effectiveness integrals which are used in the probability of discrimination calculations in SUBROUTINE EFFECT.

SUBROUTINE F123(XXX)

1. Purpose

F123 can optionally

- a. Read the data for a reentry vehicle 'cajectory from input or call SUBROUTINE VIXEN to calculate this trajectory data.
- b. Call VIXEN to calculate the data for a decoy trajectory.
- c. Compare the data for a reentry vehicle trajectory with the data for a decoy trajectory and save tables of differences.
- d. Call INTGRL to calculate and plot a corridor integral.
- e. Call INTGRL to calculate the sigma square integral to be used by SUBROUTINE EFFECT.
- f. CALL INTGRL to calculate a table of influence coefficients and produce influence coefficient plots at specified altitudes.

2. Input

Name	Common Location	Source of Input	Description
***NØTE*	** The numb		on Location column refer to positions in the
ALST	122	READIT	Stopping value of of envelope, in degrees
CASE	128	READIT	Case number
DATE	127	READIT	Date
DELY	219	READIT	Linear thrust offset along Y axis in inches
DELZ	220	READIT	Linear thrust offset along Z axis in inches
EMØ	129	READIT	Memo number
GAMF0	105	READIT	Initial flight path angle in degrees
GAMMA	028	READIT or SR2490	Ratio of specific heats
LAl	138	READIT	Axial length of initial configuration, in inches
LA2	144	READIT	Axial length of vehicle after shape change at ZTURN, in inches
LP	4000	VIXEN	Error code
MW	117	READIT or SR2490	Molecular weight of air, gram/mole
PHI0	112	READIT	Initial Euler angle $oldsymbol{\Phi}$, in degrees
PSIZET	223	READIT	Thrust misalignment angle, in degrees
PSI0	114	READIT	Initial Euler angle Ψ , in degrees
RB1	136	READIT	Base radius of inital configuration, in inches

2. Input (cont'd)

Name	Common Location	Source of Input	Description
RB2	142	READIT	Base radius of vehicle after shape change at ZTURN, in inches
RN1	135	READIT	Nose radius of initial configuration, in inches
RN2	141	READIT	Nose radius of vehicle after shape change, at ZTURN, in inches
SIG	116	READIT or SR2490	Collision cross section in angstroms
THEAL0	113	READIT	Initial Euler angle 🔍 , in degrees
THEZET	224	READIT	Thrust misalignment angle in degrees
***NØTE **			, the entries in the Common Location in the PCCUR array.
BCB, 40	6181-6220	ZREADX	Array of lower corridor values for ballistic coefficient
BCD, 40	6101-6140	ZREADX	Array of lower corridor values for deceleration in g's
BCV, 40	6021-6060	ZREADX	Array of lower corridor values for velocity in ft/sec.
BCWL1,40	6501-6540	ZREADX	Array of lower corridor values for wake length in meters for first radar frequency
BCWL2,40	6581-6620	ZREADX	Array of lower corridor values for wake length in meters for second radar frequency
BCWL3, 40	6661-6700	ZREADX	Array of lower corridor values for wake length in meters for third radar frequency
BCWR1,40	6261-6300	ZREADX	Array of lower corridor values for wake radar cross section at first radar frequency
BCWR2,40	6341-6380	ZREADX	Array of lower corridor values for wake radar cross section at second radar frequency

Input (cont'd)

Name	Common Location	Source of Input	Description
BCWR3,40	6421-6460	ZREADX	Array of lower corridor values for wake radar cross section at third radar frequency
BETAPL, 160	641 - 800	ZREADX or VIXEN	Ballistic coefficients for the input or calculated trajectory points
DVAR, 50	11707-11756	SAVEDV	Array in which design characteristic are saved
DVH,50	11607-11656	ZREADX	Input values of design variables for the second perturbation of comparison decoy
DVL,50	11657-11706	ZREADX	Input values of design variables for the first perturbation of comparison decoy
H ,40	5841-5880	ZREADX	Input altitudes corresponding to corridor points, in feet
SB, 40	6821-6860	ZREADX	Standard deviation of radar measure- ment errors for ballistic coefficient
SD,40	6781-6820	ZREADX	Standard deviation of radar measure- ment errors for deceleration in g's
SV,40	6741-6780	ZREADX	Standard deviation of radar measure- ment errors for velocity in ft/sec.
SWL1,40	6981-7020	ZREADX	Standard deviation of radar measure- ment errors for wake length in meters at first radar frequency
SWL2,40	7021-7060	ZREADX	Standard deviation of radar measure- ment errors for wake length in meter at second radar frequency
SWL3,40	7061-7100	ZREADX	Standard deviation of radar measure- ment errors for wake length in meters at third radar frequency.

Input (cont'd)

Name	Common Location	Source of Input	Description
TPLØT, 160	1-160	ZREADX or VIXEN	Times for the input or calculated trajectory points in seconds
V0GPLT, 160	481-640	ZREADX or VIXEN	Deceleration in g's for input or calculated trajectory points
VPLØT,160	321 -4 80	ZREADX or VIXEN	Velocities in ft/sec. for the input or calculated trajectory points
WL1P, 160	1281-1440	ZREADX or VIXEN	Wake length for the first radar frequency input or calculated trajectory points in meters
WL2P, 160	1441-1600	ZREADX or VIXEN	Wake length for the second radar frequency input or calculated trajectory points in meters
WL3P, 160	1601-1760	ZREADX or VIXEN	Wake length for the third radar frequency input or calculated trajectory points in meters
WR1P,160	801-960	ZREADX or VIXEN	Wake cross section for the first radar frequency for input or calculated trajectory points, see IDBL for units
WR2P, 160	961-1120	ZREADX or VIXEN	Wake cross section for the second radar frequency for input or cal- culated trajectory points
WR3P, 160	1121-1280	ZREADX or VIXEN	Wake cross section for the third radar frequency for input or cal- culated trajectory points
ww		LINFIT	Coefficient of the independent variable in a linear fit
хх		LINFIT	Constant in a linear fit
ZPLØT, 160	161-320	ZREADX or VIXEN	Altitudes for the input or calculated trajectory points, feet

Input (cont'd)

	Common	Source of	
Name	Location	Input	Description
SWR1,40	6861-6900	ZREADX	Standard deviation of radar measure ment errors for wake cross section at first radar frequency
SWR2,40	6901-6940	ZREADX	Standard deviation of radar measure ment errors for wake cross section at second radar frequency
SWR3,40	6941-6980	ZREADX	Standard deviation of radar measure ment errors for wake cross section at third radar frequency
TCB, 40	6221-6260	ZREADX	Array of upper corridor values for ballistic coefficient
TCD, 40	6141-6180	ZREADX	Array of upper corridor values for deceleration in g's
TCV, 40	6061-6100	ZREADX	Array of upper corridor values for velocity in ft/sec.
TCWL1,40	6541-6580	ZREADX	Array of upper corridor values for wake length in meters for first radar frequency
TCWL2,40	6621-6660	ZREADX	Array of upper corridor values for wake length in meters for second radar frequency
TCWL3,40	6701-6740	ZREADX	Array of upper corridor values for wake length in meters for third radar frequency
TCWR1,40	6301-6340	ZREADX	Array of upper corridor values for wake radar cross section at first radar frequency
TCWR2,40	6381- 6420	ZREADX	Array of upper corridor values for wake radar cross section at second radar frequency
TCWR3,40	6461-6500	ZREADX	Array of upper corridor values for wake radar cross section at third radar frequency

Name	Common Location	Source of Input	Description
*** NOTE *** T	he following quantiti	es are integers:	•
IREF	IØCCUR(301)	ZREADX	Trajectory processing option code, see ZREADX
IØP, 90	IØCCUR(1-90)	ZREADX	Input integer codes, see users manual
LØPT	NØCCUR(07)	READIT	Trajectory option code, see READIT
LPL Ø T	IØCCUR(302)	ZREADX or VIXEN	Number of points in the input or calculated trajectory
MHEAT	NØCCUR(10)	READIT	Option code for mass loss calculation
MØDE	IØCCUR(303)	ZREADX	Fundamental option code, see ZREADX
мфрт	NØCCUR(03)	READIT	Option code for aerodynamic heating calculation
ncømdv,50	IØCCUR(91-140)	ZREADX	Identification code numbers (indices in the ØCCUR array) of design variables to be perturbed under MØDE =2 influence coefficent calculations
NCP	10 CCUR(304)	ZREADX	Number of corridor points
ndecøy	IØCCUR(305)	ZREADX	Vehicle type identification code, see ZREADX
NDVCH	10 CCUR(306)	ZREADX	Number of entries in NCOMDV table, i.e., number of design variables
NØSEØP	NØCCUR(05)	READIT	Option code for noseblunting cal- culation, see READIT
NTHRST	NOCCUR(22)	READIT	Option code for thrusting, see READIT
AND RESIDENCE FOR DURING A PROPERTY OF THE PARTY OF THE P			

3. Output

Name	Common Location	Description
NOTE		Location Column refer to positions in effollowing quantities:
ALMAX, 200	1044-1243	Maximum in Xat the Vixen point altitudes in radius
ALMIN, 200	1244-1443	Minimum in ≼ at the Vixen point altitudes in radius
ALST	122	The stepping control on envelope < , preset to 0.2 degrees
CASE	128	Case number
CDB	99	Base drag coefficient
CDFINF	2793-2800	Skin friction drag coefficient
CDI	100	Induced drag coefficient
CDP	98	Pressure drag coefficient including
CDP0	101	Pressure drag coefficient for zero angle of attack
СМ	202	Moment coefficient about c.g., Cm
CN	203	Normal force coefficient, Cn
CØDLAM	94	7.6489 x 10 ⁻⁹ M / G ⁻² , used in PRELIM to define CODRAG which is then used in DRAG
CPSZET	216	Cosine of the thrust offset angle PSIZET
CTHZET	215	Cosine of the thrust offset angle

1	Common		
Name	Location	Description	
DECDFP	235	The pressure induced skin friction drag coefficient	
DECFTC	236	The transverse curvature induced skin friction drag coefficient	
DELCDP	234	The induced pressure drag coefficient	
DELY	219	The linear thrust offset component along Y axis, in feet	
DELZ	220	Linear thrust offset along Z axis, in feet	
FACTR9	197	Numerical factor used in DRAGCØ	
FMAX, 200	2244-2443	Frequencies at the altitudes corresponding to ALMAX values, cycles/sec	
FMIN, 200	2444-2643	Frequencies at the altitudes corresponding to ALMIN values, cycles/sec	
GAMF0	105	Initial flight path angle in radians	
LAI	138	See input, in feet	
LA2	144	See input, in feet	
LP	4000	Error code	
MDØT, 32	2708-2739	Distribution along the body of ablative mass loss rates, in lbm/ft -sec	
MX	210	thrusting moment about X axis	
MY	211	thrusting moment about Y axis	
MZ	212	thrusting moment about Z axis	
OCCUR, 4000	1-4000	Common array	

	Name	Common Location	Description
14612-344(g419-94-32-9	PEPSB, 8	2801-2808	Distribution along body of the ratio of edge pressure to stagnation pressure dimensionless
	PHI0	112	Euler angle Φ , in radians
	PSI0	114	Euler angle Ψ , in radians
	QDØT, 32	2676-2707	Distribution along the body of cold wall aerodynamic heating rates
	Q0	110	Initial value of the angular rate Q in radians/sec.
	RBD Ø T	60	Time rate of change of base radius due to ablation, ft/sec
	RB1	136	See input, in feet
	RB2	142	See input, in feet
	RNDØT	59	Time rate of change of nose radius due to ablation, ft/sec.
	RNI	135	See input, in feet
	RN2	141	See input, in feet
	SING0	221	Sine of initial flight path angle
	SMR0	111	Initial value of the angular rate R in radians/sec
	SPSZET	218	Sine of input PSIZET
	STHZET	217	Sine of input THEZET
	TAMAX, 200	1444-1643	Times corresponding to maximums in , in seconds
	TAMIN, 200	1644-1843	Times corresponding to minimums in , in seconds

***************************************	Name	Common Location	Description
	TBMAT, 3	3643-3645	Components of thrust in body axis system, lb
	THEAL0	113	Initial Euler angle $$, in radians
	WDØT	86	Rate of change of vehicle weight due to ablation, 1bm/sec
	ZMAX, 200	1844-2043	Altitudes corresponding to maximums in , in feet
	ZMIN, 200	2044-2243	Altitudes correspondint to minimums in
		nless otherwise des efer to positions in	ignated, numbers in Common Location column the PCCUR array.
	BCB, 40	6181-6220	Array of lower corridor values for ballistic coefficients
	BCD, 40	6101-6140	Array of lower corridor values for deceleration in g's
	BCV, 40	6021-6060	Array of lower corridor values for velocity in ft/sec
	BCWL1,40	6501-6540	Array of lower corridor values for wake length in meters for first radar frequency
	BCWL2,40	6581-6620	Array of lower corridor values for wake length in meters for second radar frequency
	BCWL3, 40	6661-6700	Array of lower corridor values for water length in meters for third radar frequency
	BCWRI, 40	6261 - 6300	Array of lower corridor values for wake cross section for first radar frequency, see IDBL for units
	BCWR2, 40	6341 - 6380	Array of lower corridor values for wake cross section for second radar frequency, see IDBL for units

Name	Common Location	Description
BCWR3, 40	6421-6460	Array of lower corridor values for wake cross section for third radar frequency
DB, 160	2081-2240	The array of difference between the R/V and decoy ballistic coefficient
DD, 160	1921-2080	The array of difference between the R/V and decoy deceleration in g's
DV,160	1761-1920	The array of difference between the R/V and decoy velocity in ft/sec
DVAR,50	11707-11756	Stored values of certain elements of the OCCUR array
DWL1,160	2721-2880	The array of difference between the R/V and decoy wake length in meters for first radar frequency
DWL2,160	2881-3040	The array of difference between the R/V and decoy wake length in meters for secon radar frequency
DWL3,160	3041-3200	The array of difference between the R/V and decoy wake length in meters for third radar frequency
DWR1,160	2241-2400	The array of difference between the R/V and decoy wake cross section for first radar frequency, see IDBL for units
DWR2,160	2401-2560	The array of difference between the R/V and decoy wake cross section for second radar frequency, see IDBL for units
DWR3, 160	2561-2720	The array of difference between the R/V and decoy wake cross section for third radar frequency, see IDBL for units
HØLD, 150	7101-7250	A 3 by 50 array of stored design parameters
SAVE, 4320	7251-11570 T-	A 9 by 160 by 3 array of stored difference in design parameters for determining influence coefficients.

Name	Common Location	Description
SB, 40	6821 - 6860	See input
SD, 40	6781-6820	See input
SV, 40	6741-6780	See input
SWL1,40	6981-7020	See input
SWL2,40	7021-7060	See input
SWL3,40	7061-7100	See input
SWR1,40	6861-6900	See input
SWR2, 40	6901-6940	See input
SWR3, 40	6941-6980	See input
TCB, 40	6221-6260	See input
TCD, 40	6141-6180	See input
TCV, 40	6061-6100	See input
TCWL1,40	6541-6580	See input
TCWL2, 40	6621-6740	See input
TCWL3, 40	6701-6740	See input
TCWR1, 40	6301-6340	See input
TCWR2, 40	6381-6420	See input
TCWR3, 40	6461-6500	See input
TT. 200	5561 - 5760	Combined altitude array
TTM, 200	ТТМСФМ	Combined time array
TS, 160	3201 - 3360	Array of saved R/V trajectory times

	Common	
Name	Location	Description
TPLØT, 160	1-160	Array of R/V or decoy trajectory times
WL1S,160	4481-4640	Array of stored wake length values in meters at first radar frequency for reentry vehicle
WL2S, 160	4641 - 4800	Array of stored wake length values in meters at second radar frequency for reentry vehicle
WL3S,160	4801 - 4960	Array of stored wake length values in meters at third radar frequency for reentry vehicle
WR1S, 160	4001-4160	Array of stored values for wake cross section in units specified by IDBL at first radar frequency for reentry vehicle
WR2S, 160	4161-4320	Array of stored values for wake cross section in units specified by IDBL at second radar frequency for reentry vehicle
WR3S, 160	4321-4480	Array of stored values for wake cross section in units specified by IDBL at third radar frequency for reentry vehicle
ZPLØT,160	161-320	Array of altitudes for R/V or decoy trajectory
ZS,160	3361-3520	Array of saved altitudes for R/V trajectory
NØTE T	ne following quantitie	s are integers:
II	IØCCUR(308)	Second subscript of the HØLD array
INALPH	NØCCUR(30)	Option to Input ≪
JJ	IØCCUR(310)	Second subscript of SAVE array
К	IØCCUR(313)	Number of altitudes in the combined altitude array, TT
LØPT	NØCCUR(07)	Trajectory option code
NCØN	IØCCUR(312)	Location in the ØCCUR array of design

Name Common Location		Description	
NOTE	The following quantitie	es are integers (cont'd)	
NDDC0Y	INFTST	Control code used in INTGRL	
NGEØM	NØCCUR(15)	Input geometry option code	
NLØW		A control code used in calling HEADER	
NTHRST	NØCCUR(22)	Input thrusting option code	

4. Numerical Methods

The following abbreviations will be used:

rvt means reentry vehicle trajectory.

bdt means basic decoy trajectory.

cdt means comparison decoy trajectory.

set of tables the values of up to nine characteristics of rvt are saved for each altitude at which SUBROUTINE VIXEN outputs data. To obtain the second set of tables, the values of the corresponding characteristics for a bdt or a cdt is subtracted from that of the rvt for each characteristic at each altitude. The third table saves up to three sets of these differences in the SAVE array.

In the table below, the first column contains the name of the array in which the values of the characteristic for the rvt are saved. The second column contains the name of the array in which the differences are saved. The third column contains the name of the characteristic whose differences are being saved.

rvt Values	Differences	Characteristic Name
vs	DV	velocity
DS	DD	deceleration
BS	DB	ballistic coefficient
WLIS	DWL1	wake length at radar frequency one
WL2S	DWL2	wake length at radar frequency two
WL3S	DWL3	wake length at radar frequency three
WRIS	DWR1	cross section at radar frequency one
WR2S	DW R2	cross section at radarfrequency two
WR3S	DWR3	cross section at radar frequency three

The two statements: - 100 CALL TIMERS(1, TIMTAB)
CALL TIMERS(-1, TIMTAB)

provide for the possibility of printing out the elapsed time between execution of the two statements. In the present deck this subroutine is a dummy producing no output.

After initializing NDC and NDVC, F123 calls SUBROUTINE SAVEDV to save the values of ØCCUR(133-145), ØCCUR(205-209) and ØCCUR(222) in DVAR(1-19) respectively. These values will be restored to the ØCCUR array later. Next IREF is tested. If IREF is not equal to two go to 497. The transfer to 497 means that the rvt is to be input or calculated when IREF is three or one respectively. If IREF equals two, NDECOY is tested. If NDECOY equals one go to 497. In this case, either a bdt or the rvt is to be processed. If NDECOY equals two, one cdt will be calculated for each design parameter being perturbed. If NDECOY equals three, two cdt's will be calculated for each design parameter being perturbed. If NDECOY is either two or three, the DO loop ending at 111 is entered to save the values of the design parameters being perturbed. These are saved in the HØLD array. HØLD(1,i) saves the value for the basic decoy. HOLD(2, i) saves the value for the first comparison decoy and HØLD(3, i) saves the value for the second comparison decoy. NDVC is the number of design parameters to be perturbed in one case. The input arrays DVL and DVH contain the perturbed values for the first and second comparison decoys respectively.

At 497, the DØ loop ending at 777 is entered and IREF is tested. If IREF = 2

control passes to 498. Control passes to 401, 402 or 403 when NDECØY

is one, two and three respectively. At each of these three statements the values of NLØW and NHIGH are set and statement 404 is executed next. At 404, NCØN is defined. This is the location in the ØCCUR array of the Ith parameter being perturbed. Next, the call to SAVEDV restores the values saved in DVAR to the ØCCUR array. Then going to 499, NLØW and NHIGH are set for the rvt and 499 follows.

At 499, the D ϕ loop ending at 444 is entered to obtain and process trajectory data. If KK equals two, Φ CCUR(NC Φ N) is set equal to DVL(II) for the first comparison decoy. If KK equals three, Φ CCUR(NC Φ N) is set equal to DVH(II) for the second comparison decoy. Next, if MØDE is not equal to one, the case number is increased by . 001 to aid in identifying printed output and plots. Next, the case, date and memo number are printed and IREF is tested again, and if = 3 passes to 28. The sequence following this test and ending at 56 tests the input options and may reset some of them. The next three set values The following three set input options equal to storage for numerical constants. quantities in order to carry them over to the following input case unless they The next eight statements change units from inches (input units) are reset. to feet (units used internally). The next ten statements set drag coefficient Then LOPT is tested. If LOPT equals zero go coefficient quantities to zero. to 201. If LOPT is not equal to zero, the next nine statements set rotational quantities equal to zero. If $L\Phi PT = 0$, the quantities related to maximums and minimums in a are zeroed. The next four find the trigonometric functions of the thrust offset angles. The next six change angles from degrees to radians. In the next thirteen, the mass loss and heating quantities are set equal to zero.

The call to TIMERS next prepares to measure the time taken to calculate trajectory. Then VIXEN is called to calculate the trajectory and TIMERS is called twice, the first time to print the time elapsing for the trajectory calculation and the second for the time elapsing between the execution of statement 100 and this call to TIMERS. The following six statements set the thrust quantities equal to zero. The next eight reconvert geometric quantities from feet to inches. Next the value of ALST is changed from degrees to radians and the next three statements set options equal to stored input quantities to prepare for the next case.

Now IREF is tested. If IREF equals two, go to 30. If IREF equals one, the data for the rvt is saved in the DØ loop ending at 22. Then LP is checked.

If LP < 6 control passes to 407. If LP equals six, the rvt calculations have failed. A message to this effect is printed, SAVEDV is called to restore values from DVAR to the ØCCUR array, and control returns to the main program.

At 30, HEADER is called to indicate the type of decoy trajectory being calculated and print selected quantities associated with it. Then, in the DØ loop ending at 33, the differences described in the table above are saved. Next LP is tested as above; if equal to 6, a message is written, SAVEDV is called, and the program goes next to 777. If LP is less than 6, control passes to 507.

In the sequence of statements beginning at 507 and ending at 50, the altitudes in the input array H and the altitudes at which VIXEN produces output are combined into one array, monotonically decreasing. If the same altitude is found in both arrays, it is counted only once. The altitude values are put in

the TT array and the corresponding times are saved in the TTM array. The number of elements in each of these arrays is K. Next in the DØ loop ending at 333, the differences needed by the influence coefficients SUBRØUTINE INFCØF are saved. The nine statements between 333 and 444 provide for the calling of SUBRØUTINE INTGRL which may calculate corridor integrals and sigma square integrals as well as call the plotting routine, AVPLT, and the influence coefficients SUBRØUTINE INFCØF. After 777 SAVEDV is called to restore values to the ØCCUR array and control returns to the main program.

5. Other Information

- A. F123 is called by the main program.
- B. F123 calls
 - (1) SUBROUTINE HEADER
 - (2) SUBROUTINE INTGRL
 - (3) SUBROUTINE SAVEDV
 - (4) SUBROUTINE VIXEN
 - (5) The dummied SUBROUTINE TIMERS
- C. F123 calls the IBM supplied functions SIN and COS.

4.1 Integration of Special Functions

SUBROUTINE INTGRL (KA, KB, LX, KD, KE, Q, R, S, SIG, DC)

l. Purpose

INTGRL is intended to perform one of four main tasks depending upon certain input options.

- A. To evaluate a corridor integral and print a tabular array of data at each of a number of altitudes.
 - B. To evaluate a sigma square integral.
 - C. Call the plot routine to obtain a corridor plot.
 - D. Call the plot routine to obtain an influence coefficient plot.

2. <u>Input</u>

Name	Source	Common Block	Descrip
A, 27	SR2490 or ZREADX	PCCUR (11571-11597)	See tex
Б, 40	LINFIT	PCCUR (4961-5000)	See tex
C, 40	LINFIT	PCCUR (5001-5040)	See tex
D, 160	LINFIT	PCCUR (5041-5200)	See tex
E, 160	LINFIT	PCCUR (5201-5360)	See text
F, 40	LINFIT	PCCUR (5361-5400)	See tex
G, 40	LINFIT	PCCUR (5401-5440)	See tex
H, 40	SR2490 or ZREADX	PCCUR (5841-5880)	Altitude
IØP, 90	ZREADX	IØCCUR (1-90)	Option
KA	F123		Used to array n
KB	F123		Used to array n
KD	F123		See tex
KE	F123		See text
KX	F123	IØCCUR (313)	The nur
LPLØT	VIXEN	IØCCUR (302)	The nur
LX	F123		Flag sp array a integral
NCP	SR2490 or ZREADX	IØCCUR (304)	Number
NDECØY	F123	INFTST	Test pa
OCCUR, 4000	Unlabeled Common	ØCCUR (1-4000)	

lock	Description	Preset
571-11597)	See text	A(I) = 1 If I=1 (MOD3) otherwise A(I)=0
61-5000)	See text	
01-5 040)	See text	
4 1-5200)	See text	
01-5360)	See text	
61-5400)	See text	
01-5440)	See text	
41-5880)	Altitudes at which corridor limits are input	0
90)	Option code	1
	Used to determine which elements of the IOP array need to be tested	
	Used to determine which elements of the IOP array need to be tested	
	See text	
	See text	
13)	The number of elements in the T array of altitudes	
02)	The number of elements in the Z array of altitudes	
	Flag specifying which three elements of the A array are to be used in evaluating the corridor integral	
04)	Number of elements in the H array	1
	Test parameter for influence coefficient plots	1
4000)		
		N .

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2. Input (Concl'd)

Name	Source	Common Block	
		на на при на На при на пр	
Q, 40	SR2490 or ZREADX		Array d
R, 160	SR2490 or F123		See Tex
S, 40	SR2490 or ZREADX		Array o
SIG, 40	SR 2490		Standard
T, 200	SR2490 or ZREADX	PCCUR (5561 - 5760)	See Tex
TPLØT, 160	VIXEN	PCCUR (1-160)	Array o
Z, 160	VIXEN	PCCUR (161-320)	of altitu
			Array d data

**** NOTE

DC is a special input of alphanumeric data

A

ck	Description	Preset		
	Array of lower corridor limits	0		
	See Text	0		
	Array of upper corridor limits	9		
	Standard deviation in error of measurement			
5 61 - 5760)	See Text	0		
160)	Array of times corresponding to the Z array			
1-320)	of altitudes			
	Array of altitudes for which VIXEN stores to data	rajectory		

3. Output

Name	Common Block	Description	Preset
A, 27	See Input	See ZREADX for AA	See input
B, 40	See Input	See LINFIT description	
C, 40	See Input	See LINFIT description	
D, 160	See Input	See LINFIT description	
E, 160	See Input	See LINFIT description	
F,40	See Input	See LINFIT description	
G, 40	See Input	See LINFIT description	
HDIF	PCCUR (11758)	H(1) - H(NCP)	0
OCCUR, 4000	unlabelled common	Some values are changed for use by the optimizer	0
Ql		Lower corridor limit at initial altitude	
Q2		Lower corridor limit at any other altitude.	
R1		Value of R at initial altitude	
R2		Value of R at any other altitude	
S 1		Upper corridor limit at initial altitude	
S2		Upper corridor limit at any other altitude	
T, 200	See Input	See text	0
Tl		Used by ADD, see Text	
T2		Used by ADD, see Text	
XX, 200		See Text	
1 Y, 200		See Text	
ZZ, 200		See Text	

4. Numerical Procedures

Before the logical flow in INTGRL is discussed, it will be useful to describe in some detail what we call the corridor integral. The input array H contains a set of altitudes at each of which an upper corridor limit and a lower corridor limit has been input for one or more of nine different arrays. The appropriate set of upper and lower corridor limits are sent to INTGRL through the list in the arrays S and R respectively. The number of elements in each of these arrays is NCP, also an input quantity. The array Z contains the altitudes at which VIXEN outputs trajectory data. The array R contains the difference between the value of some specified characteristics of the reentry vehicle and the value of the same characteristic of a decoy at each of these altitudes. The number of elements in the R and Z arrays is LPLØT, which is defined in VIXEN.

SUBROUTINE LINFIT is used to fit straight line segments between the pairs of points (H(I), Q(I) and H(I+1), Q(I+1)) $I=1,2,\ldots, NCP-1$. The coefficients of the fit are saved in the arrays B and C. Similarly, the points (H,S) are fitted and the coefficients saved in the arrays F and G, and the points (Z,R) are fitted and the coefficients saved in the arrays D and E. We can then express the values of Q, R, and S at any altitude ALT by

Q = ALT*B(I) + C(I)

R = ALT*D(I) + E(I)

S = ALT*F(I) + G(I)

The area between the segmented lines formed by Q and R is called the corridor. So long as the value of R is greater than or equal to the value of Q and less than or equal to the value of S, no integration is done. If R is less than Q on an interval between ALT1 and ALT2 the function $F(Z) = A(LX)*Z^2 + A(LX+1)*Z + A(LX+2)$ is integrated over the area defined by lines R, Q, ALT1 and ALT2 with respect to Z and the absolute value of the result is added to DA, the running sum of the integral. If R is greater than S on some interval between the altitudes ALT1 and ALT2, the same function is integrated over the region defined by the lines S, R, ALT1 and ALT2, these two being specific values of Z. The function subprogram ADD is used to perform this integration.

The subroutine flow proceeds as follows: Immediately upon entering INTGRL, I\(\phi\)P(KA + 2*KB) is tested. If I\(\phi\)P(KA + 2*KB) equals 0, no corridor integral calculations are desired and statement 1120 is executed next. If it equals 1, KQ is defined and tested in the next two statements. IF KQ = 1, the heading for the tabular output associated with the corridor integral is printed. The next two statements define JGØ. IF JGØ is 0, the slope print out for the corridor integral will be omitted. LINFIT is then called three times to save the fitting coefficients described above. The next four statements initialize the test parameters NX and ITEST, the accumulator for the corridor integral DA, and the altitude at which R first leaves the corridor DB. Q1, R1, and S1, calculated next, are the respective values of Q, R, and S at the initial altitude Z(1). These values are then saved as XX(1), YY(1), and ZZ(!) for the corridor plots. Next the value of NX is determined. will be 0, 1, or 2 depending on whether R1 is less than Q1, between Q1 and S1, or above S1. If Q1 is already outside the corridor, the next two statements will change ITEST to 1 and set DB = Z(1). Then if KQ = 0, statement 40 will be executed next. If KQ = 1, NX is tested and the WRITE statement at 10, 30, or 20 will be executed to write the first line of the corridor integral table as NX is 0, 1, or 2 respectively. Then statement 40 is executed,

Following the statement 40, NS and NR are defined and the $D\Phi$ loop ending at 1111 is entered to calculate the corridor integral.

The array T, used here, was generated in F123 by combining the H and Z arrays. If an element is common to both arrays, it is included in the T array only once. The T, H, and Z arrays are monotonically decreasing. It will usually happen that for some J, T(M) will lie between H(J) and H(J+1). If so, the value of J is found and saved in the $D\emptyset$ loop ending at 44. If not, J is set equal to NR. Similarly, it will usually happen that T(M) lies between Z(I) and Z(I+1) for some I. If so, the value of I is found and saved in the $D\emptyset$ loop ending at 55. Otherwise I is set = NS.

The six statements starting at 60 set Q2, R2, and S2 equal to the values of Q, R, and S respectively at the altitude T(M) and then save these values in XX(M), YY(M) and ZZ(M) respectively. The next three statements find the value of NY which will be 1, 4, or 7 accordingly as R2 is less than Q2, between Q2 and S2, or greater than S2. NX and NY now describe the behavior of the R line between the altitudes T(M-1) and T(M). IG Φ is set = NX + NY and the computed G Φ T Φ is executed, sending control to the statement having the statement number = $100*IG\Phi$. This transfer will result in the execution of some or all of the following six types of statements.

A. T2, if not = 0, is defined as the altitude at which R crosses either S or Q. It will then be either the higher or the lower of the two altitudes used to define the region of integration.

B. T1 = T(M-1).

Tl, when used is the higher altitude defining a region of integration.

C. DA = DA + ADD

The function subprogram ADD performs the integration and adds the result to DA.

D. CALL WRITEM

If KQ = 1, a line of output is printed in the corridor integral table for the altitude T(M).

E. IF ITEST = 0, $G\phi T\phi 950$

If ITEST = 0, statement 950 is executed next. If not, the following statement is executed.

F. GØ TØ 999

Statement 999 is executed next.

A description of the region of integration at each of the statements 100, 200, ... 900 follows. The following notation is used in the description The general form is at XXX Ll, L2, L3, L4, L5, where XXX is the statement number, Ll is the lower line of the region of integration which may be either a triangle or a trapezoid; it is always either R or S. L2 is the upper line for the region; it is always Q or R. L3 is the higher of the two altitudes defining the region and L4 is the lower altitude. L3 and L4 are parallel. L5 may be any of the four RQB, RSA, RQI and RSI meaning respectively R crosses Q from below lower corridor, R crosses S from above upper corridor, R crosses Q from inside corridor, and R crosses S from inside corridor. If there is no crossing, L5 is omitted.

At 200, R, Q, T2, T(M), RQ1 define the region of integration.

At 300, two regions are needed since R goes from above S to below Q. These regions of integration are described respectively by the lines S, R, T1, T2, RSA and by the lines R, Q, T2, T(M), RQI.

At 400, R, Q, T1, T2, RQB describe the region of integration.

At 500, no integration is required. R is between Q and S for the entire interval.

At 600, S, R, Tl, T2, RSA describe the region of integration.

At 700, two regions are required since R goes from below Q to above S. These regions of integration are described respectively by the lines R, Q, Tl, T2, RQB and by the lines S, R, T2, T(M), RSI.

At 800, S, R, T2, T(M), RSI define the region of integration.

At 900, S. R. Tl, T(M), RSI define the region of integration.

At statement 950, ITEST is changed to 1, then DB is set = T2 and statement 999 is executed.

At 999, NX is redefined to specify the relation of the beginning of the next R line segment to the corridor.

After statement 1111 has been executed KX-1 times, DA and DB are put into the OCCUR array for possible use by the optimizer. Next, if KQ = 0, the values of DA and DB are printed along with the name of the variable in the R array.

Next, $I\Phi P(KA + KB)$ is tested. If it equals 0, statement 2300 is executed. If it equals 1, we compute the sigma square integral. We use the trapezoidal rule to integrate the function $(R/SIG)^2$ from H(1) to H(I+1) $I=1,2,\ldots,NCP-1$ with respect to H. The running sum is kept in the variable SUM. The values of SIG are input in the SRS array. As a preliminary $RL\Phi$ is set = $[R(1)/SIG(1)]^2$ and SUM is set = 0. The values of R at the altitudes $H(2), H(3), \ldots H(NCP)$ are found by linear interpolation in

the DØ loop ending at 2222. SUBROUTINE INTERP finds these values. RHI is defined as $(R(I)/SIG(I)^2)$. The value of the integral from H(I-1) to H(I) is computed and added to SUM. RLØ is then set equal to RHI and the loop executed again. SUM is then put into the OCCUR array for possible use by the optimizer. Next IØP(KA) is tested. If it equals 0, statement 4000 is executed. If it equals 1, AVPLT is called to produce a corridor plot.

At 4000, if NDECOY is less than 3, control returns to F123. If it equals 3, I\(\Phi\)P (KA+5*KB) is tested. If it equals 1, AVPLT is called to produce an influence coefficient plot and control returns to F123. If it is equals 0 control returns to F123 immediately.

- A. INTGRL is called by F123 only
- B. INTGRL calls
 - 1. SUBROUTINE LINFIT
 - 2. SUBROUTINE WRITEM
 - 3. SUBROUTINE INTERP
 - 4. SUBROUTINE AVPLT
 - 5. FUNCTION ADD

FUNCTION ADD (L,R,S,A,B,C,D,E)

l. Purpose

Add evaluates $\int_{\mathbf{R}}^{\mathbf{S}} \mathbf{F}(t) dt$ over a trapezoidal region in the t, y plane defined as the area enclosed by the four lines:

1.
$$t = R$$

$$2. \quad t = S$$

3.
$$y = A*t + B$$

4.
$$y = C*t + D$$

$$F(t) = E_L^{t^2} + E_{L+1}^{t+E} + E_{L+2}$$

2. Input

Name	Source	Description
A	INTGRL	curve fit coefficient
В	INTGRL	curve fit coefficient
С	INTGRL	curve fit coefficient
D	INTGRL	curve fit coefficient
E	INTGRL	AA, weighting coefficients for corridor integrals, 11571-11597
L	INTGRL	integer indicating which AA's are to be used
R	INTGRL	altitudes in feet
S	INTGRL	altitudes in feet

The E array is input under the name AA. It reached SUBROUTINE INTGRL through the PCCUR common array and INTGRL then sends it to ADD through the argument list.

E(3), E(6), E(9), E(12), E(15), E(18), E(21), E(24), and E(27) are preset to 1.0 and the rest of the E array is preset to zero in subroutine SR2490. R and S are altitudes in feet.

3. Output

Name

Description

ADD

corridor integral increment

4. Numerical Procedure

Since the height of the trapezoid is(C-A) * t + (D-B), we may write

ADD =
$$\int_{R}^{S} F(t)*((C-A)*t + (D-B))*dt$$
.

This can be integrated explicitly as a function of t to give the integral I.

I =
$$(C-A)(E_L \frac{t^4}{4} + E_{L+1} \frac{t^3}{3} + E_{L+2} \frac{t^2}{2}) +$$

 $(D-B)(E_L \frac{t^3}{3} + E_{L+1} \frac{t^2}{2} + E_{L+2} t)$

The value of I at t = R is subtracted from its value at t = S and the result is placed in location ADD.

5. Other Information

FUNCTION ADD is called by SUBROUTINE INTEGRAL only.

FUNCTION ADD does not call or reference any subprogram.

SUBROUTINE INFCOF (DC, IZ, ZQ)

l. Purpose

SUBROUTINE INFCØF calculates a table of influence coefficients and possibly second derivatives, at each altitude for which VIXEN stores trajectory information

2. <u>Input</u>*indicates integer quantity

Name	Common Block	Source	Description
DC, 2	•	INTGRL	name of delta
H, 150	PCCUR(7101-7250)	F123	holds design variable values
II	IØCCUR(308)*	F123	second subscript of H
IZ, 19	•	INTGRL	locations, in ØCCUR array, of 19 special parameters
JJ	IØCCUR(310) *	F123	first subscript of SAVE
LPLØT	IØCCUR(302) *	VIXEN	number of output altitudes
NCØN	IØCCUR(312) *	F123	location in the ØCCUR array of design parameter being varied
NDEC ØY	IØCCUR(305) *	SR2490, ZREADX	test parameter
S, 4320	PCCUR(7251-	F123	array of saved deltas
T, 160	PCCUR(1-160)	VIXEN	time array
XQ, 40	-	INTGRL	array containing design parameter names
Z, 160	PCCUR(161-320)	VIXEN	altitude array

3. Output

SUBROUTINE INFCOF produces only printed output.

4. Numerical Procedure

The following definitions help to explain the meaning of the influence coefficients and the second derivative and the method of calculating them.

The three deltas which may be printed out at each altitude are

First delta equals S(JJ, I, !)

Second delta equals S(JJ, I, 2)

Third delta equals S(JJ, I, 3)

The array called S here is called SAVE in F123 which produces it. The first subscript, JJ, specifies the appropriate of the nine possible vehicle characteristics for which deltas have been saved. The second subscript, I, indicates the altitude at which the deltas were computed. The third subscript is 1, 2, or 3, when the decoy being compared with the reentry vehicle is respectively a basic decoy, a first comparison decoy and a second comparison decy.

First influence coefficient equals

$$\frac{S(JJ, I, 2) - S(JJ, I, 1)}{H(2, II) - H(1, II)}$$

Second influence coefficient equals

$$S(JJ, I, 3) - S(JJ, I, 1)$$

H(3, II) - H(1, II)

The array called H here is called HØLD in F123 where it is generated. The subscript II comes from F123 and specifies which design parameter is being perturbed. The first subscript of H has the same meaning as the third subscript of S above.

Second derivative equals (second influence coefficient minus first influence coefficient) / (H(3, II) minus H(2, II))

The flow proceeds as follows: The DØ loop ending at 1? tests to determine if the design parameter being perturbed is one of the nineteen for which names have been stored in the XQ array. If so, JP specifies which of these names will be printed as part of the table identification. Otherwise, JP is set equal to zero and the value of the integer NCØN is printed instead. Next X21, the difference in H, is defined to be used in calculating the first influence coefficient. Then, if NDECØY equals two, statement 100 is executed next. If NDECØY equals 3, X32, the difference in H, is defined to be used for calculating the second influence coefficient and X31 is defined to be used in calculating the second derivative.

At 100 AMID is defined as the arithmetic average of H(1,II) and H(2,II) for print out. Some preliminary information is printed, then a table heading having the five columns: ALTITUDE, TIME, FIRST DELTA, SECOND DELTA, INFLUENCE COEF is written. In the $D\phi$ loop ending at 222 one influence coefficient is calculated at each altitude and a line of five numbers is printed out at each altitude. The control returns to INTGRL.

At 500, the procedure is quite similar. The three arithmetic averages AMID, BMID and CMID are computed for preliminary print out. The table heading this time has eight columns: ALTITUDE, TIME, FIRST DELTA, SECOND DELTA, THIRD DELTA, FIRST INFLU COEF, SECOND INFLU COEF, SECOND DERIV.

In the D ϕ loop ending at 555, two influence coefficients and a second derivative are computed at each altitude and the eight specified values are printed under the appropriate headings. Then control returns to INTGRL.

- A. INFC ϕ F is called by INTGRL only.
- B. INFC ϕ F does not call or reference any other subprogram.

SUBROUTINE INTERP (M, N, W, X, Y, Z)

l. Purpose

Given the two tables X and Y(X) and, in addition, a particular value of X, called W, SUBROUTINE INTERP finds Z equal to Y(W) by linear interpolation.

2. Input

Name	Source	Description
М	WAKE	dimension of X and Y arrays in WAKE
N	WAKE	size of X and Y tables
w	WAKE	particular value of X
x	WAKE	table of independent variables
Y	WAKE	table of dependent variables

3. Output

Name	Description
Z	value of Y(W) found by linear interpolation

4. Numerical Procedure:

First N is tested to determine if it is greater than zero and less than or equal to M. If it is, statement 20 is executed. If it is not, an error message is printed and SUBROUTINE EXIT is called to terminate the computer run.

At statement 20 X(1) is compared with X(2) to determine whether the X array is increasing or decreasing. The X array must be either monotonically increasing or monotonically decreasing. If it is not, results will be unreliable. If X(1) is less than X(2) control is transferred to statement 50 and the value of I, such that W is between X(I-1) and X(I), is found. If W is outside the range of the X table, I will be either 2 or N, accordingly as W is less than X(1) or greater than X(N) respectively. The value of Z is then computed at statement 40. If X(1) is greater than X(2), the value of I is found in the DD loop ending at 22 and Z is again calculated at statement 40.

- A. SUBROUTINE INTERP is called by SUBROUTINE WAKE.
- B. SUBROUTINE INTERP calls the IBM SUBROUTINE EXIT.

SUBROUTINE LINFIT (ND, NENTRY, X, Y, A, B)

1. Purpose

Given the NENTRY points (X, Y), LINFIT finds the equation of the line passing through the points (X, Y), (X_i, Y_i) , in the form $y = A_i x + B_i$, for $i = 1, 2, \ldots$, (NENTRY-1). These coefficients can then be used by the calling program for making a linear fit when the interval required is known in advance.

2. Input

Name	Source	Description
ND	F123 and/or INTGRL	adjustable dimension
NENTRY	F123 and/or INTGRL	number of elements in X, Y, A and B
X, ND	F123 and/or INTGRL	array of independent variables
Y, ND	F123 and/or INTGRL	array of dependent variables

3. Output

<u>Name</u>	Symbol	Description
A, ND	${\sf A_i}$	coefficient of X in linear fit
B, ND	$\mathtt{B}_{\mathbf{i}}$	constant in linear fit

4. Numerical Procedure

 $A_i = (y_{i+1} - y_i)/(x_{i+1} - x_i)$ and $B_i = y_i - A_i x_i$ are the equations evaluated by SUBROUTINE LINFIT.

- A. LINFIT is called by SUBROUTINE INTGRL and by SUBROUTINE F123.
 - B. It does not call or reference any other subprogram.

SUBROUTINE WRITEM(IX, Z, T, Q, R, S, DA, DB, SLØPE, N)

l. Purpose

Each time SUBROUTINE WRITEM is called, a single line may be printed in the corridor integral table.

2. Input

The source of all input quantities is SUBROUTINE INTGRL *indicates integer quantity

Name	Description	
DA	cumulative value of the integral	
DB	altitude at which delta enters or leaves corridor	
IX*	test parameter for the write statement to be used	
N*	control code; if N equals zero, print out is deleted	
Q	lower corridor value at altitude Z	
R	value of delta at altitude Z	
S	upper corridor value at altitude Z	
SLØPE	slope of delta on latest line segment	
T .	time at altitude Z	
Z	altitude	

3. Output

Only printed output is produced as described in Section 4.

4. Numerical Methods

First N is tested. If N equals zero, no printing is done and control returns to INTGRL. Otherwise, IX is divided by ten so that it can be used as the index of a computed go to statement.

Control is then transferred to 10, 20, 30, 40, 50, or 60 when IX is 1, 2, 3, 4, 5, or 6 respectively. At each of the six write statements at 10, 20, 30, 40, 50, and 60, the first six columns of the integral table are filled. These contain the values of altitude, time, lower corridor, delta, upper corridor and integral value. At 20, the leave corridor column is also filled. At 30, the enter corridor column is filled. At 40, the slope column is filled. At 50, both the leave corridor and slope columns are filled. At 60, both the enter corridor and slope columns are filled. After the line has been printed, control returns to INTGRL.

- A. SUBROUTINE WRITEM is called by SUBROUTINE INTGRL only.
- B. SUBROUTINE WRITEM calls no other subprograms.

4.2 Storage of Geometric Parameters

SUBROUTINE SAVEDV(K, DVAR, ØCCUR)

l. Purpose

SAVEDV stores the values of ϕ CCUR(133-145), ϕ CCUR(205-209) and ϕ CCUR(222) in DVAR(1-19) respectively and later restores these values to the ϕ CCUR array.

2. Input

*indicates integer quantity

Name	Source of Input	Description .
DVAR, 50	F123	array to save selected DCCUR values
K *	F123	test parameter
OCCUR, 4000	F123	common array

3. Output

Name		Description
DVAR, 50		See Input
ØCCUR, 4000	,	See Input

4. Numerical Procedures

If the input test parameter K is one, statement 100 is executed. If K is two, statement 200 is executed.

A 100 the values of ϕ CCUR(133-145), ϕ CCUR(205-209) and ϕ CCUR(222) are saved as DVAR(1-19) respectively and control returns to F123.

At statement 200 the values stored in the DVAR array at statement 100 are restored to the appropriate locations in the OCCUR array and control returns to F123.

- A. SAVEDV is called by F123 only.
- B. SAVEDV does not call or reference any other subprograms.

4,3 Miscellaneous Printout Operations

SUBROUTINE HEADER(K)

1. Purpose

HEADER prints the type of vehicle whose trajectory is being processed along with the values of nineteen design parameters, the value of NGE ϕ M, an input option,and the value of LP an error test parameter.

2. Input

Name	Source	Common Block	Description
K	F123		test parameter
NØCCUR, 30	READIT	NØCCUR	input options
ØCCUR, 4000		ØCCUR	common array

3. Output

SUBROUTINE HEADER produces printed output only.

4. Numerical Procedure

Immediately upon entering HEADER, K is tested. The statements 10, 20 and 30 are executed next when K is 1, 2, and 3 respectively.

At 10 the heading "BASIC DECOY TRAJECTORY" is printed and control is transferred to 40.

At 20 the heading "COMPARISON DECOY CHARACTERISTICS" is printed and control is transferred to 40.

At 30 the heading "REFERENCE REENTRY VEHICLE CHARACTER-ISTICS" is printed and statement 40 follows.

At 40 the values of nineteen design parameters, the option NGE ϕ M and the test parameter LP are printed with appropriate headings. Then control returns to F123.

- A. HEADER is called by F123 only.
- B. HEADER does not call or reference any subprograms.

SUBROUTINE TIMERS

1. Purpose

SUBROUTINE TIMERS is a duminy subroutine.

2. Input

None

3. Output

None

4. Numerical Procedure

The original TIMERS has the facility to print the time elapsing between the execution of any two specified statements in a subroutine. It has been replaced by the dummy because this print out is not desired at present.

- A. SUBROUTINE TIMERS is called by F123 only.
- B. SUBROUTINE TIMES does not call or reference any other subprogram.

5.0 EFFECTIVENESS OPERATIONS

Effectiveness Operations

The implementation of the decoy effectiveness model technology is contained in SUBROUTINE EFFECT.

SUBROUTINE EFFECT

1. Purpose

SUBROUTINE EFFECT calculates quantity PD which is the probability that a decoy will be discriminated. SUBROUTINE EFFECT receives from input a quantity PFD (the probability of false dismissal of a reentry vehicle and calculates a quantity SIGMA. Next T is found such that

$$PFD = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{T} e^{-\frac{x^2}{2}} dx$$

This is done by a Newton-Raphson iteration scheme. Finally PD is calculated as

$$PD = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{T + SIGMA} \frac{x^2}{2} dx$$

2. Input

Name	Source	Common Block	Preset	Description
IØP, 90	SR2490, ZREADX	IOCCUR (1-90)	1	option parameter
HDIF	INTGRL	PCCUR(11758)	0	total length of corridor
PFD	SR2490, ZREADX	PCCUR (11757)	0	probability of false dismissal
SRS, 9	SR2490, ZREADX	PCCUR (11598- 11606)	0	number of smooth radar samples

3. Output

Name	Common Block	Description
PD	ØCCUR (3962)	probability of discrimination
SIGMA	ΦCCUR (3965)	The sum of nine weighted squares divided by HDIF. SIGMA equals the square root of the quotient

4. Numerical Procedure

The D ϕ loop ending at 11 accumulates the sum of nine weighted squares. Then the two statements following 11 divide this sum by HDIF and set SIGMA equal to the square root of the quotient. $T\phi$ LD is set equal to -2 as the initial guess for T. Y is the corresponding value of the integral at this value of T. K is an iteration counter. The IBM function subprogram

$$DERF(T) = \sqrt{\frac{2}{\pi}} \int_{0}^{T} e^{-x^{2}} dx$$

determines the error function used in the integration. If we substitute $X/\sqrt{2}$ for X then the desired integral can be expressed as

INT =
$$\frac{1}{2}$$
 · (1 + DERF ($\frac{T}{\sqrt{2}}$))

The iteration starts at statement 10 where K is increased by 1. If K reaches 20 the program goes to 99 where PD is set equal to one, an error message is written and control returns to FEV.

If convergence is reached, the program goes to 99 where the value of the integral of (T + SIGMA) is calculated and control returns to FEV.

If K is less than 20 and convergence has not been achieved, TOLD and Y are reset and the program goes to 10 to increase K and try again.

- A. SUBROUTINE EFFECT is called by SUBROUTINE FEV.
- B. SUBROUTINE EFFECT calls the IBM routines DABS and DERF.

6.0 CLASSIC FUNCTIONS FOR TESTING OPTIMIZATION TECHNIQUES

Classic Functions

The following section contains the description of SUB-ROUTINE CLASSC, which contains classic functions to be used in testing the optimization procedures.

SUBROUTINE CLASS (F321)

l. Purpose

SUBROUTINE CLASSC contains classic functions which are designed to provide difficult tests of how well a minimization routine works.

2. Input

*indicates integer quantity

Name	Common Location	Source of Input	Description
A, 514	ΦCCUR(3 ∪1 - 814)	READIT	curve fit coefficients which are read in
I¢P	NOCCUR(3)*	READIT	code which determines the function to be minimized; input as MOPT
X, 4000	ØCCUR (1-4000)	FEV	the OCCUR locations defined in FEV
3. Output	, p		
LP	ØCCUR(4000) *		error control code
X, 4000	ØCCUR(1-4000)		the output OCCUR locations correspond to the function

4. Numerical Procedure

SUBROUTINE CLASSC begins by testing the control code $I\Phi P$. If $I\Phi P$ equals 3, 4, or 5 control passes to statements 300,401, or 501 respectively. If $I\Phi P$ has none of these values it evaluates the equation

$$F = 100. (X_2 - X_1^2)^2 + (1. - X_1)^2 + A_1$$

then sets X_{100} equal to F. If the absolute value of I ϕ P is 1, control then passes to statement 999. If not, the following equations are evaluated before control passes to 999.

$$B = A_{11} + (X_1 - A_7) \{ A_{10} + (X_1 - A_7) [A_9 + (X_1 - A_7) A_8] \}$$

$$C = A_{16} + (X_1 - A_{12}) \{ A_{15} + (X_1 - A_{12}) [A_{14} + (X_1 - A_{12}) A_{13}] \}$$

$$X_{101} = A_2(X_2 - B)$$

$$X_{102} = A_3(X_2 - C)$$

Statement 300 begins the calculations for another function with the zeroing of the quantities FA, FB, FC, and FD. The quantities FA, FA2, FA3, and FA4 are then evaluated from the equations below and their values assigned respectively to X₂₀₀, X₂₀₁, X₂₀₂, and X₂₀₃.

$$FA = X_1^2 + X_2^2 + 2. X_3^2 + X_4^2 - 5. X_1 - 5. X_2 - 21. X_3 + 7. X_4 + A_{17}$$

$$FA2 = 8. + X_4 - X_3 + X_2 - X_1 - X_4^2 - X_3^2 - X_2^2 - X_1^2$$

FA3 = 10. +
$$X_4$$
 + X_1 - 2. X_4^2 - X_3^2 - 2. X_2^2 - X_1^2

$$FA4 = 5. + X_4 + X_2 - 2. X_1 - 2. X_1^2 - X_2^2 - X_3^2$$

Control then passes to statement 999.

Statement 401 evaluates using the equation below the fourth function whose value is then assigned to X_{300} , before control passes to 999.

$$F = 4.X_1 + X_2 + A_{25} (1./X_1 + 1./X_2) + A_{26}$$

The fifth function is evaluated by statement 501 and its value assigned to X₄₀₀ before statement 999 is reached.

$$F = A_1 X_1^2 + A_2 X_1 X_2 + A_3 X_2^2 + A_4 X_1 + A_5 X_2 + A_6.$$

Statement 999 sets the dummy variable F321 to zero, then LP is set equal to 1 before the return to FEV is executed.

- A. SUBROUTINE CLASSC is called by SUBROUTINE FEV.
- B. SUBROUTINE CLASSC calls on the IBM supplied routines IABS and FDXPI (exponentiation).

7.0 PLOTTER INTERFACE SUBROUTINES

Plotting

The subroutines utilizing in plotting, AVPLT, MAXMIN, and PLT are described in the following sections.

SUBROUTINE AVPLT (IZ, XQ, X, Y, Z, KY, IC)

l, Purpose

AVPLT can produce any of four kinds of plots, depending on the value of KY. If KY = 1, influence coefficient plots will be prepared at a specified number of altitudes, NPA. NPA may be a maximum of 160. Three points are plotted on each graph. These points are not connected by straight lines. If KY = 2, one corridor plot is produced. Three curves are plotted on the same graph. The points of each curve are connected by straight lines. If KY = 3, one plot of Y vs. X is produced. The points are connected by straight lines. If KY = 4, one plot of \log_{10} Y vs. X will be produced. The points are connected by straight lines. If KY = 5, the plot file will be closed and the computer run will be terminated.

2. <u>Input</u>*indicates integer quantity

Name	Source of Input	Common Block	Preset
H Ó LD, 150	F123	PCCUR (7101-7250)	0
IC *	Calling Program	-	-
II *	F123	IOCCUR (308)	-
IMPLØT *	SR2490	IOCCUR (309)	0
IØP, 90 *	SR2490 or ZREADX	IOCCUR (1-90)	1
IZ, 19 *	Calling Program	-	-
JJ *	F123	IOCCUR (310)	-
KX *	F123	IOCCUR (313)	-)
KY*	Calling Program	-	-
LPLØT *	VIXEN	IOCCUR (302)	•
NCØN *	F123	IOCCUR (312)	-
NDECØY *	SR2490 or ZREADX	IOCCUR (305)	1
NPA*	SR2490 or ZREADX	IOCCUR (307)	1
NPV, 160,*	SR2490 or ZREADX	IOCCUR (141-300)	1
SAVE, 4320	F123	PCCUR (7251-11570)	0
T, 200	F123	PCCUR (5561-5760)	0
x	Calling Program	-	•
XQ, 40	Calling Program	-	
Y	Calling Program	-	-
z	Calling Program	***	
ZPLØT, 160	VIXEN	PCCUR (161-320)	0

ock	Preset Value	Description	
-7250)	0	design variable being perturbed	
	-	If KY = 3 or 4, test parameter for log plots. If KY = 1 or 2, contains the vertical axis title.	
)	468	Second subscript in HØLD matrix	
)	0	Test parameter for opening plot file	
0)	1	Option parameter	
	-	Array containing plot title information	
)	-	First subscript of the variable SAVE	
•	-	Number of points for each curve on corridor plot	
1	-	Test parameter for kind of plot	
)	•	Number of altitudes at which information is output from VIXEN.	
)	-	Location in ØCCUR array of design parameter being perturbed.	
)	1	Test parameter for corridor plot title	
)	1	The number of altitudes at which influence coefficient plots are produced.	
-300)	1	Array containing indices of altitudes at which influence coefficients flows will be produced.	
-11570)	0	Dependent variable for influence coefficient plots.	
-5760)	0	Expanded array of altitudes	
	•	Dependent variable for all plots except influence coefficient plots	
	-	Array containing horizontal axis	
	•	Either second dependent variable for corridor plots or dependent variable for third or fourth type of plots	
		Third dependent variable for corridor plots	
320)	0	Array of altitudes at which VIXEN outputs information	

, jei

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3, Output

Name	Common Block	Preset Value	Description
IMPLOT *	IOCCUR (309)	0	Test parameter for opening plot file

4. Numerical Methods

Immediately upon entering AVPLT, the parameter IMPLOT is tested. If IMPLOT = 0, IDFRMV is called to open the plot file. IMPLOT is then changed to 1 and statement 10 is executed. If IMPLOT = 1, statement 10 is executed next.

At statement 10, KY is tested. If KY = 1 or 2, statement 20 is executed. If KY = 3 or 4, control passes to statement 110. If KY = 5, control passes to statement 230 where the plot file will be closed and the computer run terminated. After statement 20, the vertical axis plot title is defined.

Next, in the DØ loop ending at statement 33, the program starts to compare each element of the IZ array with NCØN. If any IZ = NCON, statement 40 is executed next, the required subscript of IZ having been saved as JP. If none of the IZ's = NCON, JP is set to zero, and statement 45 is executed.

At statement 40, JS and Jr are defined. These specify which two elements of the XQ array will be used for the horizontal axis title of an influence coefficient plot or of a corridor plot if a design variable is being perturbed. Statement 45 is executed next. At statement 45, KY is tested. If KY = 2, statement 70 is executed next. If KY = 1, the three statements following statement 45 define the W array of independent variables which a then remain constant for each of the NPA influence coefficient plots to be set up in the $D\Phi$ loop ending at statement 66. The W's are the three values of the design variable being perturbed. W(1) is the smaller of the two values for the comparison decoys. W(3) is the largest of these two values. W(2) is the value for the basic decoy. The H Φ LD array values are set in F123 in the $D\Phi$ loop ending at statement 111. The values in the SAVE array were computed in F123 in the $D\Phi$ loop ending at statement 333. The J defined at the beginning of the $D\Phi$ loop ending at statement 66 is the index of the altitude at which the values put into the R array were saved. JJ specifies which of the 9 possible arrays of differences is to be used. The statements following the definition of R(3) define the plot titles. Then IOP(76) is tested.

Consequently, if IOP(76) = 1, the program jumps to statement 60 where the AVCO plot routine EZPLØT is called to set up a plot and then statement 66 is executed. IF IØP(76) = 0, XL, XU, YL, and YU which give necessary scaling information for the Aerospace plotter are calculated. PLT is then called three times to produce a plot and statement 66 is executed next. The statement after 66 returns control to INTGRL. The sequence of statements beginning at 70 and ending just before 110 produce one corridor plot. Three curves are plotted on the same graph, X vs. T, Y vs. T, and Z vs. T. X is the expanded array of lower corridor values. Z is the expanded array of upper corridor values. Y is the expanded array of deltas. These deltas are calculated in F123 in the DØ loop ending at statement 33 and expanded in INTGRL. T is the expanded array of altitudes calculated in F123 in the DØ loop ending at statement 50. XL and XU are respectively the smallest and largest values in the Tarray. YL is the smallest element

in the X, Y and Z arrays and YU is the largest element in these three arrays. These values are needed by the plotter for scaling purposes. The plot titles are defined next, then at statement 95, IOP(76) is tested. If it is zero, XL, XU, YL, and YU are changed as required for the Aerospace plotter. The 3 calls to PLT are then executed and control is returned to INTGRL. If IOP(76) = 1, statement 100 is executed next, then control return to INTGRL.

The sequence of statements beginning at 110 and ending just before 230 can produce any of 28 possible plots depending upon the meaning of X, Y, KY and IC(1).

If N=1, a plot of Y vs. X will be produced. If N=2, a plot of log to the base 10 of Y vs. X will be produced. At statement 110, N is set = 1, then if IC(1)=0 and KY=4, N is changed to 2. The DD loop ending at 111 then tests to determine if all of the Y's are equal. If all the Y's are found to be equal, no plot is produced and control returns to VIXEN. If they are not all equal, statement 120 is executed next. The values of Y are then put into the W array in case it proves necessary to take logs. This will be necessary if the Aerospace plotter is called to produce a log-linear plot. The log if each W is taken in the DD loop ending at 122 if necessary. Statement 125 and the subsequent write statement put the plot title into the B1 array. Then if IOD (76) = 1, statement 130 is executed calling EZPLOT. Control then returns to VIXEN. If IOD(76) = 0, XL, XU, YL, and YU are calculated, and the Aerospace plotter PLT is called to produce a plot. Control then returns to VIXEN.

The statements beginning at 230 close the appropriate plot file and terminate the computer run.

5. Other Information

- A. SUBROUTINE AVPLOT is called by either SUBROUTINE INTGRL or SUBROUTINE VIXEN.
 - B. SUBROUTINE AVPLT calls the SUBROUTINE MAXMIN.
- C. SUBROUTINE AVPLT calls the Aerospace routine PLT and the following AVCO library subroutines:
 - 1. SUBROUTINE IDFRMV
 - 2. SUBROUTINE EZPLØT
 - 3. SUPROUTINE FRAMEV
 - 4. SUBROUTINE ENDJØB
 - 5. SUBROUTINE PLIND
 - D. SUBROUTINE AVPLT calls the following IBM functions:
 - 1. DMIN1
 - 2. DMAX1
 - 3. DLØG10
- E. Statements of the form WRITE(9, XXXX), where XXXX is a format number, place information concerning plot titles on tape 9. This information is read back by statements of the form READ(9, YYYY), where YYYY is a format number.

SUBROUTINE MAXMIN(NTABLE, NDIMEN, X, XMIN, XMAX)

l. Purpose

MAXMIN finds the largest value and the smallest value in the X array containing NTABLE numbers. The smallest value is placed in location XMIN and the largest is placed in location XMAX.

2. Input

Name	Source	Description	
NDIMEN	AVPLT	adjustable dimension for X array	
NTABLE	AVPLT	number of elements in X array	
X, XDIMEN	AVPLT	array of numbers to be searched	

3. Output

Name	Description		
XMIN	smallest number in the X array		
XMAX	largest number in the X array		

4. Numerical Procedure

Both XMIN and XMAX are set equal to X_1 . Then X_2 , X_3 ,... X_{NTABLE} are compared with XMIN. If any of these numbers is smaller than XMIN, then XMIN is set equal to that X. Parallel to this X_2 , X_3 ,... X_{NTABLE} are being successively compared with XMAX. If any X is greater than XMAX, then XMAX is set equal to this X.

5. Other Information

- A. SUBROUTINE MAXMIN is called by AVPLT
- B. SUBROUTINE MAXMIN calls no other subroutines or functions.

SUBROUTINE PLT

l. Purpose

SUBROUTINE PLT is a dummy subroutine included so that the calls to the AEROSPACE plotter can be simulated. At AEROSPACE, this should be removed before the deck is compiled or it will replace the AEROSPACE plotter.

2. Input

None

3. Output

None

4. Numerical Procedure

When PLT is entered, control is returned immediately to AVPLT.

5. Other Information

- A. SUBROUTINE PLT is called by AVPLT only.
- B. SUBROUTINE PLT does not call or reference any othersubprogram.

8.0 LIBRARY SUBROUTINES

8.1 Arc Cosine Function - ACOS (ACOSR, ACOSD)

Aveo

research and advanced development division

WRITE-UP NUMBER F4-022

PROGRAMER'S HANDBOOK

PROGRAMER

M. DeBolt

MACHINE IBM

360/75

DATE 19 June 1967

BCD NAME

PAGE

ACØS, ACØSR, ACØSD

IDENTIFICATION: Arc Cosine Function

USAGE:

X = ACØS(W)

X returned in radians

X = ACØSR(W)

X returned in radians

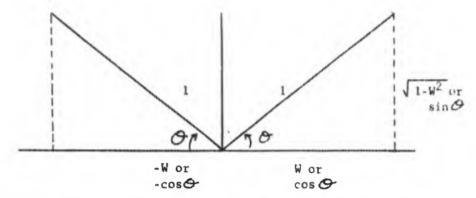
X = ACØSD(W)

X returned in degrees

In all the above cases, W must be between -1.0 and +1.0. Also, W must be given in REAL*8 and X is returned in REAL*8.

EXPLANATION: (Method)





The arc cosine is computed from the arc tangent i.e.

$$\mathcal{O}$$
 = arccos (W) = arctan $\left(\frac{\sqrt{1-W^2}}{W}\right)$

Since VI-W2 is always positive (because the Fortran square root function always returns positive numbers) and W can be positive or negative, the angle returned will be between 0 and TT (as shown in the graph).

NOTE: This routine was compiled under OPT = 2.

8,2 Arc Sine Function - ASIN (ASINR, ASIND)

Areo research and advanced development division PROGRAMER'S HANDBOOK

WRITE-UP NUMBER

PROGRAMER

DeBolt М.

MACHINE IBM

360/75

DATE

26 June 1967 BCD NAME

PAGE

ASIN(W), ASINR(W), ASIND(W)

OF

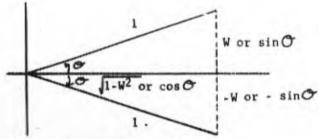
IDENTIFICATION: Arc Sine Function

USAGE:

X = ASIN(W)X returned in radians X returned in radians X = ASINR(W)X returned in degrees X = ASIND(W)

In all the above cases W must be between -1.0 and +1.0. Also W must be given as REAL*8 and X is returned as REAL*8.

EXPLANATION: (Method)



The arcsine is computed from the arc tangent, i.e.

= ARCSIN(W) = ARCTAN
$$(\sqrt{1 - W^2})$$

Since $\sqrt{1-W^2}$ is always positive (because the Fortran square root function always returns positive numbers) and W can be positive or negative, the angle returned will be either in the first or fourth quadrant (as shown in the graph). The angles in the fourth quadrant are returned in their positive form because if the angles are negative, they are added to 2 TT . For example for the angle - TT /6 the answer is returned as 51.

NOTE: This routine was compiled under OPT = 2.

RAD 1-1101

8.3 Arc Tangent Function - ATANQ (ATANQR, ATANQD)

Alprea

research and advanced development division

PROGRAMER'S HANDBOOK

MACHINE IBM

DATE 26 June 1967 PLOTATE ATAILUITY ATANQCY, Y) ATANQKC

WINDSHIELD OF BUILDINGS OF

Arc Tangent Function 1 DENTIFICATION:

USAGE:

PROGRAMER

M. DeBolt

A = ATANQ(Y, X)A is returned in radians A = ATANQR(Y, K)A is returned in radians A = ATANQD(Y, X) A is returned in degrees

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X and Y must both be REAL*8 and the answer A is also returned as a REAL*8 If X and Y are both equal to zero, the program will useminate and an error will be given (IHC2651).

EXPLANATION:

The arc tangent is computed by using the Fortran supplied routine DATAN2, i.e. it finds the angle whose tangent is Y/X (arguments as above). The only cofference between these routines (DATAN2 and ATANQ) is that ATANQ always returns the angle in its positive form from 0 to 2 TT. It checks to see if an angle is negative and if it is, it is added to 2 TT.

This routine was compiled under OPT = 2.

8.4 FIXIBCOM (MIBCOM) has been dummied out of the program.

Originally this routine was a modification of the IBM system routine IBCOM.

8.5 FERR ΦR has been dummied out of the program. Originally it was related to the error traceback of MIBCOM.

8.6 Variable Field Input Subroutines - LA000000 (WHERE, SETUP, READIN, HEDING)

Arco

CORPORATION PROGRAMER'S HANDBOOK

WRITE-UP NUMBER F4-005

PROGRAMER
L. Atkingen, R430

MACHINE

ØS/360

8 September 1966

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BCD NAME 1) WHERE, 2) SETUP

3) READIN, 4) IN DING

Language: ØS/360 Fortrun
IV and E/L

IDENTIFICATION:

Title: Variable Field Input Subroutines

PURPOSE:

To perform the same input operations on OS/360 as BCDCØN/SYMBLS* does on the 7094. These routines are also more flexible in the inputting of subscripted variables.

USAGE:

Calling Sequence:

CALL WHERE (TABLE)

CALL SETUP (SHNAME

, L, XY, Nl, N2,...)

CALL READIN (INCØLL)

CALL REDING (NTAPE)

Complete description of procedures for proper use of these subroutines:

A. WHERE: This routine is called to inform the routines of the location of a table which will be generated by SETUP and used by READIN. The size of the table must be set by the programmer such that the number of words in the table must be greater than or equal to the number of input variables times seven. The best way to do this is to use the explicit type statement:

REAL* 4 TABLE (ND).

where ND ≥ 7 times the number of input variables. WHERE must be called before any of the other routines are, and should never be called more than once.

B. SETUP: This routine is similar to BCDCØN in that it generates a table of 8 character EBCDIC names versus associated core addresses. Variable length information must be included in the argument list and subscript information is included as arguments rather than in a hollerith field, as is the case with BCDCØN. It is

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^{*} Reference: Writeup F2-21 of the Programmer's Handbook.

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or 10 3) READIN, 4) HEDING

Language: ØS/360 Fortran IV and BAL

called once for each variable as follows:

The first argument is the external name of the variable and must have at least eight characters; however, only the first eight characters will be used as the table entry, so any symbols greater than eight characters having their first eight the same will generate the same symbol in the table and only the first one encountered will be effective. If the name has less than eight characters, it must be left adjusted and the eight character field filled with blanks.

The second argument, L, is the length of the variable, in bytes; i.e.

- 1 for LOGICAL*1.
- 2 for INTEGER*2.
- 4 for LOGICAL*4, INTEGER*4, REAL*4.
- 8 for REAL#8.

The third argument is the internal variable name (i.e., the core location with which the external name is to be associated). This can be subscripted to associate the symbol with core locations other than the beginning of an array.

The remaining arguments are the subscripts. (These are omitted if the variable is not dimensioned). Except for the right most subscript, these must match the dimensions of the variable exactly. The value for the right most subscript need not be correct, but a value must be given in the argument list. The maximum number of subscripts is seven; if more are given, only the first seven will be used. The array length is also somewhat restricted: e.g., if a variable has n subscripts then the product of the left-most (n-1) of them must be less than or equal to 32767. For example, a singly-subscripted variable may have dimension 50000 (say) but a doubly-subscripted variable may not have its first subscript greater than 32767, although its second subscript may be as large as desired. .

This routine, unlike BCDCON and HOLMAN, does distinguish between single-valued variables and one-dimensional arrays. This can be seen by the following:

Given:

CALL SETUP (SHX

, 8, X, 10)

CALL SETUP (SHY

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and the data card: X 5.0 3.0 Y 8.0 6.0, the equivalent Fortran statements are:

X(1) = 5.0

X(2) = 3.0

Y = 8.0

Y = 6.0

Therefore the 8.0 will be overwritten, instead of the 6.0 going into the next double-word location above Y. Incidentally, if Y were subscripted on a data card, READIN would terminate execution with an error message since Y is not supposed to be subscripted.

SETUP may be called anywhere in a program (even in other subroutines) as long as it is called after WHERE has been called and before READIN is called. However SETUP must not be called more than once for any one variable since the calling instructions are not overwritten as BCDCON does.

The only error is if WHERE is not called before SETUP, in which case SETUP is never executed, and when READIN is called, execution will be terminated with an error message.

C. READIN: This routine reads in the input data (from Fortran Data Set Reference No. 5, so the "data" card is //GØ.FTO5FOO1 DD *), lists the cards on the output tape (FTO6FOOL), obtains the location where the data is to be stored by finding the symbol punched on the card in the SETUP-generated table, converts the data as prescribed, and then stores it into the core location obtained above. This process is continued untils 1-9 punch in column one is encountered, at which point this number is stored in INCØLL, the rest of the card is processed, and control is returned to the calling program.

NOTE: A zero punch in column one will set INCOLL equal to zero but will not terminate a case. If the routine encounters an E (part of END-ØF-JØB) in column one, execution is terminated immediately by calling EXIT.

Either set of characters (i.e., either the 029 or 026 keypunch) or a combination of both may be used on data cards. However in alphanumeric fields, if EBCDIC characters (such as parentheses, equals, apostrophe) are desired, the 029 keypunch should be used.

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The breaking character used to separate items (fields) on the cards is a blank. Therefore the way in which data is presented to the subroutine is completely variable as it appears in columns 2-72, with the exception that a symbol or a piece of data may not be continued from one card to another. The items on a card may be divided into two categories, symbols, and data fields.

- 1. Symbols. These define core locations and are of two types, name symbol and subscript field.
 - a) The name symbol is a set of characters, the first eight of which are used to look up the entry in the table generated by SETUP. The name must begin with an alphabetic character (or \$) and is terminated by a blank or left parenthesis. From the table entry the base core location, the variable length, and the dimension information is obtained. Execution is terminated with an error message if a symbol is not found in the table.
 - b) The subscript field, enclosed in parentheses, modifies the core location defined by the last name symbol and sets the addressing increment for successive storing of data. Multiple subscripts in the field are separated by commas, and as with 7094/SYMBLS, blanks may appear anywhere within the parentheses. Data may be stored sequentially (i.e., varying the first, or left most, subscript) or by varying any one of the other subscripts. If the subscripts are not given, the data will be stored sequentially (note this is different from 7094/SYMBLS). If any number of subscripts (less than or equal to the number of subscripts as dimensioned) is given, the data will be stored by varying the right-most subscript (the same as 7094/SYMBLS). However, storing on any one of the subscripts may be forced by putting the subscript number immediately after the right hand parenthesis of the subscript field.

Examples: DIMENSION X(4,6,3)

1) X 5.0 6.0 8.0

X(1) 5.0 6.0 8.0

X(1, 1, 1)1 5.0 6.0 8.0

X(1, 1, 1) = 5.0

X(2, 1, 1) = 6.0

are all equivalent to

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PAGE 5 OF 10 BCD NAME 1) WHERE, 2) SETUP 3) READIN, 4) HEDING

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$$X(3, 1, 1) = 8.0$$

$$X(1, 1, 1) = 5.0$$

$$X(1, 2, 1) = 6.0$$

$$X(1, 3, 1) = 8.0$$

or even X(1)3 5.0 6.0 8.0

$$X(1, 1, 1) = 5.0$$

$$X(1, 1, 3) = 8.0$$

This really comes in handy when one wants to store by varying the second subscript (say), starting at some point in the middle of the array. Example: to start at X(3, 2, 2), in 7094/SYMBLS one would have to write X(27,2) since $27 = 4 \times 6 \times 1 + 3$ and must be computed from the dimensions. Now one only needs to write X(3, 2, 2)2

As in 7094/SYMBLS there is a provision for using subscripts to define areas to be set to a value defined by a piece of data which follows. Example:

X(3, 2 - 4, 2) 5.0 is equivalent to

Any one of the subscripts may be of the form KL - K2 (where KL < K2). Also, if another data field appears next, it will be stored at the location corresponding to $K2 \neq 1$, with the other subscripts the same.

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PROGRAMER L. Atkinson, R430	MACHINE ds/360	8 September 1966	3) READING 4) REDING
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Example: If "6.0" follows "5.0" in the previous example, it will be stored in X(3, 5, 2).

If the number of subscripts on a data card exceeds the number given in the argument list of SETUP for that variable, execution is terminated with an error message.

- 2. Data Fields. These can be divided into six items:
 - a) Integers are defined by lack of a decimal point, E, D, or an imbedded plus or minus sign. They can be positive or negative, and a plus is assumed if there is no sign in front. For a length 4 variable the value must not exceed 2147483647 (231 1) and if the value exceeds 32767 for an INTEGER*2, the value stored will be modulo 32768. Also one must be careful when reading an integer into a length 8 variable since the second word of the double word will not be zeroed.
 - b) Floating point numbers are defined by a decimal point in the field. However the decimal point may be emitted if an E or D, or imbedded plus or minus or both appears in the field, as XXEYY, XX+YY, XXE-YY.

In this case the decimal point is assumed to be just to the left of the exponent field.

The maximum field length to the left of the decimal point is nine digits. Of the total number of digits in the field, only the first sixteen are converted. Any digits after these are ignored until an exponent field (E, D, +, or -) or a field terminator (blank or parenthesis) is encountered. An E, D, +, or - defines the exponent field, and of course the exponent must be integral. Note that E and D are interchangeable since all conversion is done in double precision (only the store depends on the length of the variable). In general, the permissible forms are

- ± x.xxxxxxxxxxxxxxxx
- ± x.x00000000000000x ± y y

±X.XXXXXXXXXXXXXXX, where there can be one or more X's, there may be either one or two Y's, the deciral point may appear anywhere to the left of the tenth X (measured from the left), and if no sign appears, it is assumed to be positive.

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BCD NAME 1) WHERE, 2) DEJUP 3) READIN, 4) (EDITO

Language: ØS/360 Fortran IV and PAL

c) Hexadecimal numbers are input in a manner analogous to the way octal numbers are input by way of 7094/SYMBLS. A & (or X) in column one of a card signifies to READIN that the card contains only hexadecimal data and nothing else. The data may be read into length 4 or length 8 variables only. A maximum of 8 digits may be read into length 4 variables, and a maximum of 16 digits may be read into length 8 variables. If more than this maximum is given (before a blank), the first 8 (or 16) will be stored correctly, and the digits left over will be right adjusted and stored in the next core location as defined by the last core defining symbol. If less than the maximum is given, the field is right adjusted and stored, and if other than 0 - 9 or A - F appears in the field, execution is terminated with an error message.

- d) Alphanumeric data may be defined in three different ways:
 - 1) Hollerith card for HEDING. This type of card has an H in column one. Columns 2 80 of this card (not 2 72 as with 7094/SYMBLS) will be read into a specially set aside block of storage as Hollerith characters. Nothing else can be done with the card.
 - ii) Alphanumeric data intended for arrays may be read in using an A-card. There are two cards associated with this option. The first card must have an A in column one, a core location defining symbol and a length of field count anywhere in columns 2 72. This count is in units of the length of the variable. For instance, to read 24 characters the length would be 6 for a Real*4 variable and 3 for a Real*8 variable. The second card, which must follow immediately, will contain the alphanumeric data to be stored. The characters on this card, starting in column one will be stored until the length of field is enhausted. The rest of the card is then ignored. If the number of characters as obtained from the A card exceeds 72, execution is terminated with an error message. Example of A-cards:

on the 7094, A TITLE 12 would cause columns 1 - 72 of the next card to be read in. On the 360,

A TITLE 9 (TITLE Real*8)

A TITLE 18 (TITLE Real*4)

would also cause columns 1 - 72 of the next card to be read in.

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BCD NAME 1) WHERE, 2) SETUP 3) READIN, 4) HEDING

Language: ØS/360 Fortran IV and BAL

iii) Alphanumeric data intended for single storage. This type of data has a slash at the beginning of the field, and the first blank encountered terminates the processing of the field. The maximum number of characters is 8 for a length 8 variable and 4 for a length 4 variable. If more than the maximum are given on the card, execution is terminated with an error message. If less than the max are given, the characters defined are left adjusted and the remainder of the word (or double word if Real*8) is filled with blanks. Also, to fill X with blanks, one can use

X

e) Logical data: To input logical data, all that is necessary is to use a decimal point followed by T or F; all characters after this are ignored until a blank is encountered. For instance, the following data cards all will produce the same result

(LØGICL = .TRUE.)

LØGICL .T

LØGIC1 .T.

LØGICL .TRUE.

LØGIC1 .TRUEBUTREALLYFALSE

One must be careful when reading a logical constant into a length 8 variable, since the second word of the double word will NOT be zeroed.

f) Table generating data. This feature is exactly the same as it is in 7094/SYMBLS. I. e., data may be generated with a minimum of keypunching when numbers are desired ranging from a lower limit to an upper limit in steps of certain given deltas. The format is as follows:

 $x_1(x_2)x_3(x_4)x_5$, etc.

This will generate from X_1 to X_3 in steps of X_2 ,

 X_3 to X_5 in steps of X_{14} , etc.

where the X₁ may be floating point or integers, but not mixed. There may be as many deltas as desired and they may be positive or negative. There should be no imbedded blanks in the expression, but they are permitted

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PROGRAMER R430 L. Atkinson,

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BCD NAMEL) WHERE, 2) SI 3) READIN, 4) HEDING 2) SETUP

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before a number and after a parenthesis

i.e., X1 (X2) X3 is permitted.

- 3. Transfer card. This card will cause return to the calling program after the remainder of the card has been processed. It is signified by a 1 - 9 punch in column 1. Also, this value is stored in INCØLL.
- 4. End of job card. This card signifies to READIN that there is no more data to be processed, and that the caller wishes to terminate his run. READIM will then transfer control to EXIT.

Internal and External Controls.

- A) A * or \$ in column 1 will cause the entire card to be ignored (it is printed on the output tape, but NOT on line).
- B) There is no *PRINT or *NOPRI option as there is in 7094/SYMBLS. All data cards are automatically printed. There is also no COMMON option.
- C) There are no external controls.

ERRORS: Execution is terminated immediately with an error message, if

- i) SETUP has not been called before READIN.
- ii) A name symbol on a data card is not found in the table generated by SETUP.
- iii) A field contains an illegal character (such as a decimal point in a subscript field).
- iv) A ariable is given more subscripts than allowed according to the table. Also, if an error is found, processing is terminated immediately. The rest of the data cards up to the transfer card are not scanned for errors, as is the case with 7094/SYMELS.

D. HEDING

This routine will write (on NTAPE) the hollerith card read by READIN and eject a page. If an H card was not read in by READIN, the printer will merely restors a page.

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PROGRAMER L. Atkinson.

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8 September 1966

3) READIN. ØS/360 Fortran Language:

IV and BAL

The only error is in the case that the Fortran data set reference number (NTAPE) is not defined on a DD card, in which case the result is the same as if one tried to execute a Fortran WRITE with the same number.

Summary

- 1. No complex variables allowed.
- Either keypunch may be used.
- Core storage: 292A₁₆ bytes or 2635₁₀ words.
- External subroutines used:

IBCOM#

FDKPI#

EXIT

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F4-005-1

PROGRAMES

Akinson

MACHINE OS 360 DATE

October

BENNIE WHERE SETUP READINDHEDING

IDENTIFICATION

Title Variable Field Input Subroutines (Addenda)

USAGE

This write-up is an attempt to clarify some points in the previous write-up (F4-005) and also a discussion of two modifications recently made to READIN

CLARIFICATIONS Referring to page one of the previous wr. cup in the discussion of WHERE - ND must be greater than or equal to seven times the number of input variable names. , e greater than or equal to seven times the num SETUP

The first sentence in the fourth paragraph on page two should read "The remaining arguments are the dimensions"

In 7094/SYMBLS a dollar sign anywhere on a data card meant that the rest of the card was a comment. This is NOT true for READIN A dollar sign is treated as a letter, except when it appears in column one in which case the entire card is treated as a comment and agnored

Care should be exercised when calling these routines in a source module which has been compiled under OPT=2 The compiler will invariably compile the module incorrectly unless

- All input variables are in COMMON
- The module does no arithmetic calculations but instead c lis other subroutines which perform the calculations

Therefore unless one (or both) of the above two conditions is satisfied the programmer should not use OPT=2 for the module which calls SETUP and READIN

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programer I Atkinson, R430 MACHINE ØS 360

October 11, 1966

READIN HEDING

B MODIFICATIONS

- READIN has been modified so that it will treat a comma and an equal sign (from either keypunch) as a field terminator for variable names (symbols) subscript fields, and numerical or logical data. However, only a blank (or end of card) terminates alphanumeric and hexadecimal data. This was done to enable READIN to process NAMELIST data cards. The only changes that need be made to the data cards are:
 - 1) The asterisk (for repeated fields) must be removed since READIN will treat the field as illegal. In lieu of the asterisk the dash may be used in the subscript field as follows

 $A = 20 = 0 \ 0$ becomes $A(1-20) = 0 \ 0$,

- 2) The quotes must be removed from alphanumeric data and a slash (or A-card) used instead, as NAME= 'ALPHA' becomes NAME=/ALPHA
- 3) Logical data must have a decimal point in front of the T or F.
- An option of returning control to the calling program after encountering the END-ØF-JØB card has been added. This has been done so that the programmer can regain control in order to close any data sets (such as the plots, by calling PLTND: which would otherwise be closed abnormally by the system. However, the programmer must be extremely careful not to try to read "tape" 5 afterwards. After calling PLTND (or whatever) he merely needs to CALL EXIT.

This option can be exercised if the programmer adds a second argument in the CALL to READIN, which is a non-standard return and sets INCOLI (the first argument) to the value 8888 upon first entry to READIN. This is a flag to inform READIN that there is a non-standard return. An example follows:

DATA INCØL1/8888/ CALL SETUP (etc.)

etc

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Atkinson R430

MACHINE ØS 360 DATE October 11, 1966 READIN, HEDING

CALL READIN (INCOL1, \$99) [or&99 if EBCDIC]

[Calculations]

GØ TØ 1

99 CALL PLIND

CALL EXIT

RETURN

END

It should also be mentioned that no changes are necessary to existing programs which do not use this option as long as they do not set INCOLI to 8888 initially.

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PROGRAMER L. Atkinson, R430

MACHINE

OS/360

29 May 1967

OF OCD NAME WHERE, SETUP READIN. HEDING

IDENTIFICATION:

Title: Variable Field Input Routines (Addenda)

USAGE:

READIN has been completely rewritten in BAL in order to increase efficiency and to save core storage. In the process several modifications have been made.

- (1) Special characters are now permitted in the names of variables; only the first character need be alphabetic or a dollar sign. Any special characters, except an equals sign or left parenthesis (either keypunch), may be used.
- (2) A blank is now permitted between the E or D and the exponent in floating point data fields. READIN treats the blank as a plus sign. Thus READIN is now able to read cards written by a FORTRAN program.
- (3) In logical data fields, . Y and . N (for true and false) are now permitted in addition to . T and . F. Therefore the user can have logical print, punch, plot flags in his program to control the output, as follows:

PRINT . YES PUNCH . NØ PLØT .YES

As with . T and . F, all characters after the Y or N are ignored until a blank or comma (or the end of the card) is encountered.

- (4) The suppression of printing of the data cards is now possible by punching NØPRINT in columns 1 through 7. To restore the printing mode, the user punches PRINT in columns 1 through 5. Anything else punched on these cards is ignored. The user does not need to start with a PRINT card since READIN is normally in the printing mode.
- (5) READIN normally ejects a page for each case. This may be changed to a line skip for each case by punching NØFLIP in columns 1 through 6. To restore the page ejection mode, the user punches FLIP in columns 1 through 4. The remainder of these cards is ignored by READIN.
- (6) The core storage requirement of SETUP/READIN has been reduced to 11BB, bytes or 1135 single precision words.

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8.7 The dummy subroutines EZPLØT, ENDJØB, FRAMEV, IDFRMV, and PLTND replace the AVCO plotting routines of the same names and must be removed when the program is used at AVCO.

APPENDIX I - Program Listing and Preset Data

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r	SETUP INITIAL STATE	MAIN	105	
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	GO TO 900	MALN	129
nd Cities a select	60 10 900	MAIN	130
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	CALL DAVOON	MAIN	133
	[F(ITERN.EQ.1)-GO-TO-200	MAIN	154
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improcuración test 4 heb	-Ua(I) UP(I)	MAIN	150
860	CONTINUE	MAIN	151
	CALL GIMAX(ALB12), UB(2), 2, -1, ERR, LIMIT, XX(2), VAL)	MAIN	153
ertore and too	CALL GIMAX(ALB(2),UB(2),2,-1,ERR,LIMIT,XX(2),VAL) IFIITERN.EQ.1) GU TO 200	MAIN	154
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CADM4RK
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                                      - IMPLICIT REAL #8 (A-H,O-Z)
                                                                                                                                                                                                                                                                                                 ---- ADM4R 2
                                  SUBROUTINE ADMARKINZ, ZDEL, VALUE, DERN, UPBND, DNBND, FACTOR, FREQ. AUMAR 3
                             1 HLIMIT+LZ, ZXINDE, DELMIT)
                                  DIMENSION
                                                                                    ZBAR ( 70 )
                                                                                                                                                                                                                                                                                                                                                    AUM4R
                             3DERNM1(70) .DERNM2(70). DERNM3(70).
                                                                                                                                                                                                                                                                                                                                                    AJM 4R
                             4VALUEN( 70.) -----
                                  DIMENSION B0(70) , B1(70)
                                                                                                                                                                                                                                                                                                                                                    ADMGK
                                 DIMENSION
                                                                                          UPBND(70) - DN8ND(70)
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                                 DIMENSION
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     C
      C
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... C.
                                 SUBROUTINE ADMARK PERFORMS THE INTEGRATION OF NZ FIRST ORDER AUMAK 44 ...
                                               DIFFERENTIAL EQUATIONS OF THE FORM DYCODOX EQUALS THE ITH
      C
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                                               FUNCTION OF (X,Y(1),...,Y(NZ)) FOR VALUES OF I FROM 1 TO NZ BY AUMAR 10
     C
                                                A FOUR POINT PREDICTOR CORRECTOR METHOD WHICH WILL ALTER THE
      C
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      C
                                               INTEGRATION INTERVAL TO MAINTAIN A REQUIRED ACCURACY.
                                                                                                                                                                                                                                                                                                                                                   AUMAR 18
                                                                                                                                                                                                                                                                                                                                                    ADM4R 19
                                                                                                                                                                                                                                                                                                                                                    ADM+K 20.
                                 N=NZ
                                                                                                                                                                                                                                                                                                                                                   AUMAR 21
                                 L=LZ
                                                                                                                                                                                                                                                                                                                                                   AUM4R 22.
                                 DEL=2DEL
                                                                                                                                                                                                                                                                                                                                                   ADM4R 23
                                                                                                                                                                                                                                                                                                                                            · AUMAR 24
                                 XINDEP=ZKINDE . .
                                 IF | DELMIT | 9002, 9001, 9002
                                                                                                                                                                                                                                                                                                                                                   AUMAR 25
          9001 DEL 411 _= DEL / 1000.000
                                                                                                                                                                                                                                                                                                                                                  ASMAK .. 26 .
          9002 CONTINUE
                                                                                                                                                                                                                                                                                                                                                  ADM4R 27
     C
                                                                                                                                                                                                                                                                                                                                         AUMAN 28
                                 IF (LI 1210, 201, 1211
                                                                                                                                                                                                                                                                                                                                            . AU44K 29
          1210 L= 1485(L)
                                                                                                     ORGANIST AND A SAME OF A SAME OF A SAME AND 
                                                                                                                                                                                                                                                                                                                                           - AJM4K 30.
                                GO TO 23
                                                                                                                                                                                                                                                                                                                                                  AUMAR 31
    - 1211-GO TO (23-204-204-204-241-L-
                                                                                                                                                                                                                                                                                                                                           -- ADM4R .32
                                                                                                                                                                                                                                                                                                                                                  AUM4R 33
          204 - DO 205 JJ = 1+N .
                                                                                                                                       PERFORM TOWNS TOWNS TOWN THE SPECIAL PROPERTY SERVICE 
                                 DERN (JJ) = SAVD (JJ)
                                                                                                                                                                                                                                                                                                                                                  ADMAR 35
                                 VALUE (JJ) * SAVE (JJ)
                                                                                                                                                                                                                                                                                                                                    .... AJM4R 30
          205 CUNTINUE
                                                                                                                                                                                                                                                                                                                                                  AJM4K 37
                                                                                                                                                                                                 any contractions in colors when we are not consider contractions contract and an account to a company contract and contrac
                 XINDEP = SINDEP
                                 GO TO 24
                                                                                                                                                                                                                                                                                                                                                AUMAR 39
     C
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                         XFREO = XINDEP & FREQ
          23
                                                                                                                                                                                                                                                                                                                                                  ADMAR 41
                                                                                                                                                                             The Company of the Co
                        LL = 2 ....... xxx -...
                                 SAVDEL * DEL
                                                                                                                                                                                                                                                                                                                                                  AUNAR 43
                                 SINDEP XINDER
                                                                                                                                                                                                                                                                                                                                                  AUMAR 44
                               ASSIGN 41 TO M

CALL DEREQ - ( VALUE - XINDEP - DERN - L ) ADM4R 45
                                 IF(L.EQ.6)GO TO 220
                                                                                                                                                                                                                                                                                                                                                  AUMAR 47
                             AUM4K 48
     C
                                                                                                                                                                                                                                                                                                                                                  ADMAR 49
                               GO TO M. ( 61, 62 )
                                                                                                                                                                                                                                                                                                                                                ADM4R .50.
                               DO 62 KK = 1.N
          41
                                                                                                                                                                                                                                                                                                                                                 AU44K 51
                           -DERNMS (KK) . DERN IKK)
                                                                                                                                                                        ADNAK 52
        62
                              CONTINUE
                                                                                                                                                                                                                                                                                                                                                  AUMAR 53
                                                                                                                                                                                                                                                                                                                     DO 43 NN = 1,3
                                                                                                                                                                                                                                                                                                                                                  AUM4K 55
                                 W1 ... DEL_/_2.000.
                                                                                                                                                                                                                                                                                             ADM4R . 50
                             DI 44 1 = 1,N
BOLLI = 0.000
                                                                                                                                                                                                                                                                                                                                   ADM4R 57
ADM4R 58
                          CUNTINUE
                                                                                                                                                                                                                                                                                                                                                AJMAR 54
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C + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 +	AD44R 60
00 50 J = 1.4	ADM4R 61
12	ADM4K. 62
AR MENT - A ADA	ALMAD 63
+2 DIVI = 0,000	
44	4 13 M A A A A
N M	ADM4R 66
44 DIVI # 3.000	AUMAR 67
	ADM4R 68
48 D(M) = 2 DDD	ADMAR 69
	AU44K 70
AI DEI	ADMAR 71
1	AUM4R 72
AND A TOTAL BA	ADMAR 73
TT USTA " VOLVU. Be in ministra on the second principal and the second	ADM4R 74
60 00' 51 1 = 1-8	ADM4K 75
	ADM4K 76
ROLL - ROLL E BILL / DIVI	ADM 48 77
GO TO (-525253 -) -+ J	ADM4R 76
52 VALUENCES = VALUE (T) & BICES / DIV2	AJM4R 79
52 VALUEN(I) = VALUE(I) & B1(I) / DIV2 TINDEP = XINDEP & H	ADM4H BO
60 TO \$1	ADM4R B1
-53 VALUEN(I) * VALUE(I) &	AUM4R 82
51 CONTINUE	ADMAR 83
54 CALL DEREQ (-VALUEN - TINDER DERN L)	ADM4K 84
1611 ED A130 TO 220	ADMAR 85
.50 CONTINUE	ADM4R d6
Damino Olif I 1110 F	ADM4R 87 .
DO 61 II 1 . N	ADMAR BB
CO TO (63, 64, 65) , NN	ADMAR 89
63 DERNM2(-II) =- DERN(II)	ADMAR 90
0.0 70 45	ADMAR OI
60 10 05 	AUM4R 92
AT WASHE STILL WALLENGITS	ADMAR 93
61. CONTINUE and account to the second secon	ADMAR 94
VINDED - TIMED	ADMAN Q5
Constitution of the contraction	ADM4R 96
A 2 CONT TABLE	ADM 48 47
43 CONTROC	ADMAR OR
H2 * DEL	A0448100
ACCION AS TO M	ADM4R101
ASSIGN 42 TO 14	A0M4R102
omande de de la 1900 de 1900 de remais, résident des mande mande de la company de la 	ADM4R103
· 42 CONTINUE	AUMARINA
XFREO = XFREQ & FREQ	ADM4R105
9042. CUNT INUE	
	AUM4R107
GU TO 4.1406. 1407. 1407. 1407. 1207.)	
1407 IF (ABS(XINDEP - XFREQ) - ABS(DEL)) 1403, 1408, 14060	POLSANGA
14060_[F(ABS(XIN)EP=HLIMIT)=ABS(DEL)] 1408.1408.1406	A 2M4R 110
1408 CONTINUE	ADM4R111
1408 CUNTINUE 1408 CUNTINUE	ADMARIT
STORT TO THE GOOD OF COMMENT OF THE COMMENT OF TH	A)44R113
THAL IT IN A WALLE ! I IV	
ZBAR(IJK) = VALUE(IJK)	. A [] M & W 1 1 4
DERNN(IJK)	
DERNN(IJK) * DERN(IJK)	A.IM add 11 5
DERNN(IJK) = DERN(IJK) DERN (IJK) = DERNM1 (IJK) DERNM1 (IJK) = DERNM2 (IJK)	AJM+R115 AUM4K116
DERNN(IJK) DERN(LJK)	AJM4R115 AUM4R116

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ADM48120
                LL - * - 1
               TEMP = ABS( XINDEP - XFREQ )
                                                                                                                                                                                                                                      ADM4R121
  11
     ____IF_( TEMP =_ABS(-DEL 1 _) _16+_16+_15
                                                                                                                                                                                                                                 ...ADM4R122
                                                                                                                                                                                                                                      ADM4R123
                                                                                                                                                   DELICA LA LA CONTROL C
          - SINDEP - = -XINDEP ---
                  SAVOEL # DEL
                                                                                                                                                                                                                                     AUM 4K & 25
                 TEMP1 = ABS( DEL 1-7-DEL ADM4R126
DEL = TEMP * TEMP1 ADM4R127
             TEMP = ABS(- XINDEP - HLIMIT-)
                                                                                                                                                                                                                                  MALLA MUALLA
                 IF ( TEMP - ABS( DEL ) ) 118, 18, 17
                                                                                                                                                                                                                                      AUM4R129
                                                                                                              THE DESCRIPTION OF THE PROPERTY OF THE PROPERT
   118 L = 1
18 L = L & 2
                                                                                                                                                                                                                                     ADM4R131
                                                                                                                                                                                                                                      AUM4K132
                 SAVDEL # DEL ...
                  TEMPL = ABS( DEL ) / DEL
                                                                                                                                                                                                                                       ADM4R133
               DEL = TEMP * TEMP1
                                                                                                                                                                                                                                     ADM4R134
            GO TO { 22 , 6 , 6 , 6 , 22} . L
                                                                                                                                                                                                                                      AJM4R135
 17
                                                                                                                                                                                                                                      ADM4K136
                                                                                                                                                                                                                                      ADM4RI37
   1406 CONTINUE
                                                                                                                                                                                                                                      ADM4R138
                .LL = 1....
                                                                                                                                                                                                                                       AUM4R139
                                                                                                                                                                                                                                      ADM4RI40
                                                                                                                                                                                                                                      ADM4K141
   1207 CONTINUE
                                                                                                                                                                                                                                       ADM4R142
                  W1 = H1 & H2 --
                                                                                                                                                                                                                                       ADM4K143
                                     W1 * W1
                  W2 =
                                                                                                                                                                                                                             ... AU44K144
                  W3 =
                                   W1 & H1 .....
                                                                                                                                                                                                                                       A044K145
                  W4 =
                                     W1 & H3
                                                                                                                                                                                                                                      ADM4R146
                  W5 = W4 & W1
                                                                                                                                                                                                                                       ADM4R147
                  W6 =
                                      W4 & W3
                                                                                                                                                                                                                                       AUM4K148
                  W7 =
                                      W3 & H3
                                                                                                                                                                                                                                       ADM4R149
                   MA =
                                      WA * HI
                                                                                                                                                                                                                                       AUM4R150
                  W9 =
                                      W1 * H3
                                                                                                                                                                                                                                       AUM4R151
                                     H2 & H3
                  W10=
                                                                                                                                                                                                                                       AUM4R152
                  W11# -- H2 *- H3--
                                                                                                                                                                                                                                       ADM48153
                                    H1 * H2
                   W12=
                                                                                                                                                                                                                                       AD448154
                                  W2 & W9 .....
                   Wlo=
                                                                                                                                                                                                                                       AD448155
C
                                                                                                                                                                                                                     .... AUM4R156
                  GU TO ( 14, 202, 202, 202, 14-) .....
                  TEMP = XINDEP & DEL
                                                                                                                                                                                                                                       AJM4K157
   14
                DEL = TEMP - XINDEP.
                                                                                                                                                                                                                                 __ AJM4K158.
                   IF ( ABS( DEL ) - ABS( DELMIT ) ) 201, 202, 202
                                                                                                                                                                                                                                       AUM44159
                                                                                                                                                                                                                                       AJMARIND ..
    201 CONTINUE
                                                                                                                                                                                                                                       ADM4RIOL
                   1 = 6
                                                                                                                                                                                                                                       ADM4R102
                   GO TO 4
                                                                                                                                                                                                                                        AUM4R163
-- 202 -- YINDEP -= XINDEP & DEL
                                                                                                                                                                                                                                       ADM4R154.
                   W13= DEL / 2.000
W14=... W13 * W13 *.. DEL.....
                                                                                                                                                                                                                                        AUM44165
                                                                                                                                                                                                                                       ADM4R156
               W15= DEL * DEL / 3.000
W17= H1 & DEL
                                                                                                                                                                                                                                        ADM 4R167
                                                                                                                                                                                                                                        AUM4R168
                                                                                                                                                                                                                                        AJM4R169
                   HT8= MT & DEF
                                                                                                                                                                                                                                      ADM4R170_
                   W19=__W1.+_DEL
                                                                                                                                                                                                                                        ADM4R171
                   W29 # W3 # DEL
               ... 80(1) = DEL / W4 + (-W14 & W15 + W6 & W13 + W2 & 2.000 + H1 + W4 &AJM4R172
                                                                                                                                                                                                                                        AU44R173
                X W
                                                                                                                                                                                                                                        AU448174
                111) & H1* W16 ) / ...W8 ....
                   B1(1)= -DEL / W10+ ( W14 & W15 + W5 & W13 + W16) /W12
                                                                                                                                                                                                                                        AUM4R175
                 B2 ____ BL / WI * 1 WI4 & WI5 + WT & WI3 * HI * W41 __
                                                                                                                                                                                                                                     AUM 4K 170
                                                                                                                                                                                                                                        AUM4R177
                1/411
                 .83 .... -DEL / W4. + ( W14.6 W15 + W3 6 W13 + W8) /W10
                                                                                                                                                                                                                                        ADM4H178
                                                                                                                                                                                                                                        AUM4K179
                 1/H3
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All a source means in	10 To the control of	ADM4R180
ľ	DO 1 1 = 1.N LBAR(I) = VALUE(-1-1680(-1) + DERN(-1) 681(1-1 + DERNM1-1-1682 - * DERNM2(1) 683 *DERNM3(I)	ADM4R181
	EBAR (I-)	-ADM4R182
1	*DERNM3(1)	ADY4R183
	CONTINUE DATA TO THE PROPERTY OF THE PROPERTY	AUM4K184
(CALL DEREG (ZBAR , XINDEP , DERNN , L)	ADM4H185
in the stem telephoresigness man	IFIL. EQ. 6) GO-TO-220	ADM4K186
	A = (W14 & W15 * W3 & W13 * W8) / W17 / W18 AO	A3M4K187
ti) o to ; escentiscentiscent	AO	ADM4R188
1.	/ W8	AU44189
cial light (three-points of spike)	A1 DEL/W17*(W146-W15-*(W1DEL) W13 * W19 1/W12	AUM4K190
1	A2 * DEL /W1 * (W14/3.000 & H1 * W15 /2.000) /H2 / W 18	AUMARISI
··· •	DO13- * 1.N	ADM4R192
1	VALUEN(I)=VALUE(I)&A *DERNN(I)& AO *DERN(I)&A1 *	ADM4R193
	DERNMI(I) GAZ *DERNM2(I).	ADM4R494
	DIF(I) * ABS(VALUEN(I) - ZBAR(I))	AUM4K195
- G.	DIF(I) = ABS(VALUEN(I) - ZBAR(I))	AUM4H196
	re a nielth m uppannith b 13 , 13 , 2	AUMARIOZ
2	XINDEP . * XINDEP . DEL	AJ44196
	DEL = DEL - FACTOR * DEL IF(L-5)7000,14,220	AUM4K199
		AUM4R200
7000	CONTINUE	AUM4R201
	L TO COLOR TO THE COLOR TO THE COLOR TO THE COLOR TO COLO	ADM4R202
	LL * 1	AUM4R203
44 N 11 WARM BELL	LL * 1 60 TO -14	AUM4R204
C		AUM 4R 20 5
13	CONTINUE.	AUM4R206
	IF(L-2)500, 5,500	AUM4R207
500	CONTINUE	AUM4R208
	H5 # H2	ADM4R209
ere will a 3 to 1 1	H3 = H2 H2: #-: H1 :	A0M4R210
	H1 - DEL	AUM4RZAL "
	GO - TO - (-1-15555	
200	SAVDEL = DEL GO JO 21	AUM4RZ13
22	DO 19 K = 1 .N IF (-DIF(K) - DNBNO(K) 1 19 . 19 . 7010	AUM4K215
		AUM4KZIO
19	CONTINUE	ADM4R217
	DEL - DEL - G-DEL - FACTOR	
7010	IF(L-516,200,220	ADM44219
11 C 10 4 4 4 1 1	(CF - No. 1) If the property of the contraction contraction and the contraction of the co	
5	CONTINUE DO - 1040 LLL - 1-N	ADM4K221
	VALUE (LLL) = ZBAR(LLL) DERN(LLL) = DERNN(LLL)	ADM4R223
and the factor of the same of	DERNILL DERNNILLI DERNNILLI	ADM4K224
1040	CONT (NUE	ADM4R225
	L Libraria - Zampan managan da	
C	00 40 17 10 10 10 10 1	ADM4R227
	GO TO (6,40,40,40,6)+L	
	DD 8 J = 1.N	AUM4R229
	DERNM3(J) - DERNM2(J)	
	DERNM2(J) # DERNM1(J)	AD44R231
	DERNMI (J) - DERN (J)	
	DERN(J) = DERNN(J)	AUM4R233
	VALUE(J)=ZBAR(J)	
8	CONTINUE	ADM4R235
	CONTINUE	
C		ADM4R237
) — » — нефк и	GO TO (212,208,208,208,209),L	
		ADM4K2J9

208 CONTINUE GO TO (206, 4-), LL 206 CONTINUE DU 203 JJJ = 1,N SAVD (JJJ) = DERN (JJJ) SAVE (JJJ) = VALUE (JJJ) 203 CONTINUE C GO TO (12-, 4-), LL 4 DEL = SAVDEL 220 NZ = N LZ = L ZDEL = DEL ZXINDE = XINDEP RETURN END AD AD AD AD AD AD AD AD AD	14R240 14R241 14R242
GO TO {-206, 4-}, -LL AD 206 CONTINUE AD OU 203 JJJ = -1, N AD SAVD (JJJ) = DERN (JJJ) AD 203 CONTINUE AD 209 CUNTINUE AD C GU TO {12-, 4}, LL AD 4 DEL = SAVDEL AD ZOOL NZ = N AD ZINDE= DEL AD RETURN AD END AD AD AD AD AD AD AD AD AD	14K243
206 CONT INUE 00 203 JJJ = -1,N SAVD (JJJ) = DERN (JJJ) SAVE (JJJ) = VALUE (-JJJ) 203 CONTINUE 209 CUNT INUE C GU TO { 12 , 4 },LL AD 200 NZ = N LZ = L ZINDE= XINDEP AD	14K244
DU 203 JJJ = -I,N AD SAVD (JJJ) = DERN (JJJ) AD AD 203 CONTINUE AD 209 CUNTINUE AD AD 209 CUNTINUE AD AD AD 200 CUNTINUE AD AD AD 200 CUNTINUE AD	141245
SAVE (JJJ) = DERN (JJJ) AD SAVE (JJJ) = VALUE (JJJ) AD 203 CONTINUE AD 209 CUNTINUE AD C GU TO (12, 4),LL AD 4 DEL = SAVDEL AD LZ = L ZDEL = DEL ZXINDE= XINDEP AD RETURN END AD AD AD AD AD AD AD AD AD	14K246
SAVE (JJJ) = VALUE (JJJ) 203 CONTINUE C GU TO (12, 4),LL 4 DEL = SAVDEL AD 220 NZ = N LZ = L ZINDEE = DEL ZXINDEE xINDEP RETURN END AD AD AD AD AD AD AD AD AD	14K247
203 CONTINUE 209 CUNTINUE C GU TO { 12 , 4 } + L 4 DEL = SAVDEL 220 NZ = N LZ = L ZDEL = DEL ZXINDE= XINDEP AU RETURN END AD AD AD	
209 CUNTINUE C GU TO (12, 4)+LL 4 DEL = SAVDEL 220 NZ = N LZ = L ZDEL = DEL ZXINDE= XINDEP RETURN END AU AU AU AU AU AU AU AU AU A	14K249
GU TO (12, 4), LL AD 4 DEL = SAVDEL AD 220 NZ = N AD LZ = L ZOEL = DEL ZXINDE= XINDEP AD RETURN AD END AD	14K250
GU TO (12 , 4) LL AD 4 DEL = SAVDEL 220 NZ = N LZ = L ZDEL = DEL ZXINDE= XINDEP RETURN END AD AD AD AD AD AD AD AD AD	148231
4 DEL = SAVDEL 220 NZ = N LZ = L ZDEL = DEL ZXINDE= XINDEP RETURN END AD AD	
LZ = L ZDEL = DEL ZXINDE= XINDEP RETURN END AD AD	14R253
ZDEL # DEL ZXINDE= XINDEP RETURN END AD	14R255
ZXINDE= XINDEP RETURN END AD AD	14K256
RETURN	14K257
END	14R258
	14K259
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       DIMENSION AL514), XLA (8), QDOT(4, 8), PEPSR(8), CCCUR(4000), AUGCUR(30) AERO
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      11UCCURIO101, CAPL
                           1. (OCCUR (029) .H SR TO ) . (CCCUR (032) . LAMBA ) .
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      STUCCALC331*TV
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      3(OCCUR(047),PS
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      4(DCCUR(064)+SINT ), (OCCUR(069) , THE TAD) , (CCCUR(070) , TANT ),
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      SIGCOUR (076), THE TA 1, (OCCUR (CA2) .V
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      610CCUR ( 692), ZTR
                            ), (OCCUR(138), LA1
                                                   ) . (CCCUR(144) . LA2
                                                                                    AERO
                                                                                           15
      7(OCCUR(145), ZTURN, ), (OCCUR(189), FAC TR1),
                                                                                    AERO
                                                                                           16
      81UCCUR103011,
                           A(1)), (OCCUP(3815), XLA(1)),
                                                                                    MERO
                                                                                           17
      SINCCUR(2676),QDOT(1,1)),(OCCUP(2801),PEPSB(1))
                                                                                    'A ERO
                                                                                           18
                                                                                    AFRO
                                                                                           19
       COMMON OCCUR, NUCCUR
                                                                                    AFRO
                                                                                           20
                                                                                    AFRO
                                                                                           21
                                                                                    AFRO
                                                                                           22
C
                                                                                    AFRO
                                                                                           23
C
             SUBROUTINE AERODY CALCULATES HEATING RATES FOR APPROPRIATE
                                                                                    AFRO
                                                                                           24
¢
          BODY STATIONS.
                            FOR A SHARP CONE, THESE STATIONS ARE THE
                                                                                    AERO
                                                                                           25
          STAGNATION POINT AND THE MAXIMUM DIAMETER POINT.
                                                                     FCR_THE
                                                                                    AFOR
                                                                                           26
          BLUNT CONE, THE STAGNATION POINT, SONIC PCINT IN TURBULENT
                                                                                    AERO
                                                                                           27
          FLOW ONLY, TANGENT POINT, THE 20,40,60,75,90 PER CENT STATIONS AERO
          BASED ON THE INITIAL AXIAL LENGTH, AND THE MAXIMUM CLAMETER POINT - IN ADDITION, SHARP COME VALUES ARE CALCULATED AT THE
                                                                                    AFRO
                                                                                           129
                                                                                    AFRO
                                                                                           30
          MAX. DIAMETER POINT FOR COMPARISON PURPOSES.
                                                                                    MERO
                                                                                           31
            QDOTEL, 11 = STAG. POINT
                                                                                    AERO
                                                                                           32
             QDOT( 2, J ) =L'AMINAR
                                                                                    A ERO
                                                                                           33
             QUOT(3,J)=TURBULENT
                                                                                    A ERO
             QUOT(4,1)=SONIC POINT
                                                                                    AERO
                                                                                           35
             J = 1 TANGENT POINT ON BLUNT CONE
                                                                                    AFRO
                                                                                           36
          J=2 THROUGH 7 CORRESPOND TO THE 20,40,60,75,90 PER CENT STATIONS AND THE MAXIMUM DIAMETER POINT ON THE BLUNT CONE.
                                                                                    AFRO
                                                                                           37
                                                                                    A ERO
                                                                                           38
             J=8 MAXIMUM DIAMETER POINT ON THE SHARP CONE OF ANGLE THETA. AERO
                                                                                           39
                                                                                           40
                                                                                    AERO
                                                                                           41
             CALCULATION OF STAGNATION POINT HEATING RATE
                                                                                    MERO
                                                                                           42
        IFIL AM DA .L T. 1.00-3)R S=1.CDO
                                                                                    MERN
                                                                                           43
        IFIL AMDA .GE . 1 . GD-31R S=RN
                                                                                    AERO
       QDOTST=1.7604 SQRT(RHOINF/(.00237500*RS)) *(V/2.604) ++3.15 CU
                                                                                    AFRO
                                                                                           45
                                                                                    A ERO
       QDOT(1, 1)=QDOTST
                                                                                           46
                                                                                    AERO
                                                                                           47
             SHARP CUNE PE /PS AT MAX DIAMETER
                                                                                    AERO
                                                                                           48
       CO 20 J=1.7
                                                                                    AFRO
                                                                                           49
       PEPSULJ 1=0.00
                                                                                    MERO
                                                                                           50
       XLA( 3) = 1.000
                                                                                           51
                                                                                    AERO
       PEPSB(8)=0.0331D0*EXP(C.0064DC* THETAD-0.33D0*(MTNF-5.Du)**0.85E0) AFRO
                                                                                           52
       PEPS B( 8) =PEP S8( 8) &Q. 4680-3* THE TAD**1.8803 200
                                                                                    A ERO
                                                                                           53
                                                                                    AERO
                                                                                           54
             BLUNT CONE STATION LOCATIONS
                                                                                    AEPO
                                                                                           55
        IF(L AMDA .L.T. 1. 0D-3)GO TO 1
                                                                                    AFRO
                                                                                           56
       XLA(1)=HN+(1.0C-SINT)/LA
                                                                                    AFPO
                                                                                           57
        IFEX .GT.ZTURNIDLA =LA1/LA
                                                                                    AERO
                                                                                           58
        IFIX .L E .ZTURN IDLA =LAZ/LA
                                                                                    AFRO
                                                                                           50
```

XL (2)= 1,000-C, 80 C*0L ()	A ERO.	-60
XLA(2)=1.000-6.6DC00LA	AERO	61
the state of the s	AFRO	62
	Appel 21 2 14 March	Account Account Account Account
XLA(5)=1.000-0.250C+DLA	AERO	63
XLA(6)=1.000-0.1DC*DLA	AFRO	64
XLA(7)=1.000-0.10(*0)LA XLA(7)=1.000	AERO	65
XEA(77-1-000		
C	AFRO	66
C QUANTITY TEST IS A NON-DIMENSIONAL AXIAL DISTANCE USEC IN	AFPO	67
C DETERMINING WHEN FLOW IS CONSIDERED CONICAL	AERO	68
C DELCHINING MICH I COM I COM I COM CONTROL CO	estal derbut	PARTY IN THE ABSTRACT AND A SECOND I I
TEST = 1.130G*RN/(LA*TANT*TANT)	AERO	69
CO 2 I=1,7	AFRO	70
1F(1.FQ . 1)GO TO 16	AERO	71
2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	AFRO	72
		73
16 CONTINUE	AERO	
IF(XLA(1).GE.TFST)GO TO 3	AERO	74
C	AERO	75
TEN=LA*TANT*TANT*1.GD4/RN	AERO	76
FLD marker skill in the description of the second of the s	AERO	77
XP = 0.17400*THETAD		
YP=1C.DC/MINF	'AERO	78
ZP=0.2D(*PLOG(XLA(1)*TEM)	AFRO	79
WP=∪.00	AERO	80
	AERO	81
IF (THETAD.LT.2C.DC)GO TO 13		-
C CALCULATION OF BLUNT CONE PRESSURE DISTRIBUTION FOR CONE HALF	AERO	82
C ANGLE GREATER THAN OR EQUAL TO 20 DEGREES.	AERO	83
Cf) 4 N = 1, 2	AERO	84
NN = N = 1		THE CONSTRUCTION OF A PERSONNEL
	AERO	85
ISUB 1= 416NN	AERO	86
TEMN =XP**NN	VESU	97
CO + J = 1.3	AERO	88
made drawn of grant and promoted the based of the based o	er ve	89
JJ=J-1 '	AERO	•
ISUB 2= ISUB 1G 2+JJ	AERO	90
TEMJ=YP**JJ	AERO	91
CO 4 K = 1, 3	AERO	92
KK = 1	AEPO"	93
ISUB = ISUB 26 6*KK	AERO	94
4 WP=WP&A(TSUB)*TEMN*TEMJ*ZP**KK	AERO	95
60 TO 15	AERO	96
C CALCULATION OF BLUNT CONE PRESSURE DISTRIBUTION FOR CONE HALL		97
CALCULATION OF BEAN CORE PARASONE DISTRIBUTION FOR CONE HALT		
C ANGLE LESS THAN 20 DEGREES.	AERO	98
13 Ci 14 N=1, 3	AERO	99
NN = N - 1	AERO	100
ISUB 1=135ENN	AERO	the property of the party of th
TFMN =XP * *NV	AERO	
(.U 14 J = 1+ 1	AERO	Iu3
JJ=J-1	AERO	104
15UB 2= 15UB 16 3+JJ	AFRO	
TEN LADOW 14		
TENJ=YP##JJ	AERO	No. a second to a second of
CO 14 K=1, 3	"A ERO"	
		100
KK ≖K − 1	A ERM	Tiles
ISUB = ISUB 2E 9*KK		Armen a ser to asser I and as
ISUB = ISUB 2E 9*KK	AERO	109
ISUB = ISUB 289*KK 14 WP=WP&A{ ISUB }*TEMN*TEMJ*ZP**KK	AERO AERO	109 110
ISUB = ISUB 2&9*KK 14 WP=WP&A(ISUB)*TEMN*TEMJ*ZP**KK 15 PEPSB(I)=WP*TAN T*TAN T&PINEPS	AERO AERO AERO	109 110 111
ISUB = ISUB 289*KK 14 WP=WPEA(ISUB)*TEMN*TEMJ*ZP**KK	AERO AERO	109 110 111
ISUB = ISUB 289*KK 14 WP=WP&A(ISUB)*TEMN*TEMJ*ZP**KK 15 PEPSB(I)=WP*TAN T*TAN T&PINEPS CO TO 2	AERO AERO AERO	109 110 111 112
ISUB = ISUB 2&9*KK	AERO AERO AERO AERO AERO	109 110 111 112 113
ISUB = ISUB 289*KK 14 WP = WP&A{ ISUB }*TEMN*TEMJ*ZP**KK 15 PEPSB(I) = WP*TAN T*TAN T&PINFPS CO TO 2 21 XLA(I) = XLA(I) PEPSB(I) = G.ODO	AERO AERO AERO AERO AERO	109 110 111 112 113 114
ISUB = ISUB 289*KK 14 WP = WP&A(ISUB) * TEMN * TEMJ * ZP**KK 15 PEPS B(I) = WP * TAN T&PINF P'S CO TO 2 21 XLA(I) = XLA(I) PEPS B(I) = C .ODO GU T() 2	AERO AERO AERO AERO AERO AERO	109 110 111 112 113 114 115
ISUB = ISUB 289*KK 14 WP = WP&A{ ISUB }*TEMN*TEMJ*ZP**KK 15 PEPSB(I) = WP*TAN T*TAN T&PINFPS CO TO 2 21 XLA(I) = XLA(I) PEPSB(I) = G.ODO	AERO AERO AERO AERO AERO	109 110 111 112 113 114 115
ISUB = ISUB 289*KK 14 WP = WP & A(ISUB) * TE MN * TE MJ * ZP * * KK 15 PEPS B(I) = WP * TAN T & PINF P'S CO TO 2 21 XLA(I) = XLA(I) PEPS B(I) = C .ODU GU T() 2	AERO AERO AERO AERO AERO AERO	109 110 111 112 113 114 115
ISUB = ISUB 289*KK	AERO AERO AERO AERO AERO AERO AERO AERO	109 110 111 112 113 114 115 116
ISUB = ISUB 2&9*KK	AERO AERO AERO AERO AERO AERO AERO	109 110 111 112 113 114 115 116

```
1 IFEZ .LT .ZTR 160 TO 5
                                                                        AERO 120
AERO 121
    GHL # 10. 00**1 C. 51420C*DLOG(H SR TD) **0. 9736DO)
                                                                      __AFRO_122
     KIL #0,9664DUETHE TAD# (C. 0052 BD GEO, 28 80-3 * THE TAD)
                                                                        ACRO 123
     K 2L # 1. CDOSLAMDA*(1. 78200-2. CCEDQ*LA MOA)
                                                                       AFRO 124
     LAPS=LA/PS
                                                                        AFRO 125
      TELL AMDA . GT . 1 . CD - 3) GO . TO 6
                                                                     ... AERO 126
                                                                        AERO 127
           SHARP CONF
                                                                        AERO 128
     QDOT(2,8)*OBL*SQRT(PCPS8(8)/(2116.00*LAPS*XLA(8)))/(K1L*K2L)
                                                                        AERO 129
     RETURN
                                                                        AERO 130
                                                                        AFRO 131
¢
           BLUNT COME
                                                                        AERO 132
AERO 133
           LAMINAR TANGENT POINT HEATING
  6 QCOT(2,1)*1.7320C*QDOT(1,1)*(0.007789DOGPEPS8(1)*(1.849CUEPEPS8(1)AERO 134
     1*(-1.6832DC&O.841DC*PEPS8(1))))
                                                                        AERO 135
Ċ
          LAMINAR HEATING ON CONTCAL FRUSTUM
                                                                        AERO 136
      CO 7 1=2,8
                                                                        AERO 137
   7 QDOT (2.1) #QBL # SQRT(PEPSB(I) /(2116.00 * LAPS *XLA(I)) / (KIL *K2L)
                                                                        'A ERO 138
     RETHRM
                                                                        A ERO 139
                                                                       AERO 140
                                                                        AERO 141
                                                                  AERO
           TURBULENT HEATING RATE CALCULATIONS
                                                                             142
    5 QBTC=10.00**(C.7450U*DLOG(H SRT0)**0.312200)
                                                                        MFRO 143
     KIT=C.9DOGG.OZDC*THETAD
                                    * AERO 144
     K2T=0.600
                                                                        AFRO 145
     K3T=U.65D06LA*(0.631800-0.65D-3*LA) AFRO 146
                                        AERO 149
AERO 149
     K4T=1.CD0
    __ IE(LAMDA.GT.1.UD-3)GO 10 8
           SHARP CONE
                                                                 ... AERO 150
      TM=PS/2116.D0
                                                                        AERO 151
     ODUT (3, 8) = QBTC* (PEP SB (8) * TM) ** 0.8DO / (K1 T* K2T*K3T *K4T *X LA(8) ** 0.165 AEPO 152
     X DO'T
                                                                        AERO 153
     RETURN
                                                                        AERO 154
                                                                        AERO 155
           BLUNT CONE
                                                                        AERO 156
           TURBULENT SONIC POINT HEATING
                                                                        AERO 157
    8 IF(Z .LE . 115000 .D C 1MB = 3 . 45D C
                                                                        AERO 158
      IF(Z .GT .1150CC .DC | MB = 2.254D OGZ + (2.246D-5 &Z + (-146.90-12&Z +367.10-18 AERO 159
     X 11
                                                                        AERO 160
     QDOT (4, 1) = 376G.DC*(RHOTHF**C. 800) *V**MB
                                                                        AERO 161
                                               ) *(10 . DU **(4. D) *AFRO 162
     QDOT(4, 1)=QDOT(4,1)/((RS++0.2DO)+(FACTR)
     KM8 111
                                                                        AERO 163
    TM=PS/2116.DC
                                                                        AERO 164
     QCUT (3, 8) =QBTC+ (PEP SB (8) + TM) ++0. 800/(K1 T+ K2T+K3T+K4T+XLA(8)++0.105 AFRO
                                                                             165
    TURBULENT TANGENT POINT HEATING
                                                                        AERO 166
                                                                        AERO 167
      FITANG=(PEPSB(1)**(4.100/6.00))*(1.07-(PEPSB(1))**(1.00/6.00)) **3.AFRO 168
                                                                        AERO 169
     QCOT(3,1)=1.346D4/((RS+(1.DC-THETA))++0.2D0)
                                                                        AERO 170
     QDOT(3, 1) =QDDT(3, 1)*((RHO!NF/2.3750-3)**0.8DO)*FITANG*(U.QUO1DJ*V) AERO 171
    X * *MB
                                                                        AERO 172
          ASSIGNMENT OF APPROPRIATE DENOMINATOR FCR HEATING CN STATIONS AERO 173
         AFT OF TANGENT POINT.
                                                                    AERO 174
     FEST = 1 . 130 C*RN/(3.DC*LA* TANT* TANT)
                                                                        AFRO 175
     K 2T= 1.000 .
                                                                        AERO 176
      IFILAM DA.LE.C. 2DC1K2T=C. 6DO 82. ODU#LAMDA"
                                                                        AERD 177
     K 3T = 0.6 SDCE LA * (C.C3180 C-C.6 SD-3* LA )
                                                                    AERO 178
     K4T=1.000
                                                                       AERO 179
```

e .	CENUM 1*KIT*K2T*K3T*K4T	AERO	180
C	CENOMI FOR XLA .LE. TEST	AERO	181
. Se	K 3T = C. 6 SDC&L A * (O. C 31 PD C-C. 6 SD-3 * LA)	AFRO	
	CENOM2=K1T*K2T*K3T	AFRI	
C	CUNOM2 FOR XLA .LF. 3c*TEST	AERO	
10 10 0	K21=6.600	THE STREET SHOULD BE THE STREET	The state of the s
	K4T# 1.00C	AERD	
0 0 4 NO MAR	TEM=LA-RNGRN/SINT		
		AERO	
	K3T=C.650C&TEM*(C.(31PDO-0.69D-3*TEM)	AFRO	1RR
_	OEMON 3=K 1 T *K 2 T * K 3 T * K 4 T	∆ ERO	189
C	CENOM3 FOR XLA .GT. 3. * TEST	AERO	-
	OC 2 1 2 4 5 4	AERO	
	IF(XLA(I).LE.TEST)GO TO 10	AFRO	
	IF(XLA(1).LE.(3.0C*TE \$7) 160 TO 11		
	TM=PS/2116.DC	AFRO	
~~~	TURBULENT HEATING ON CONICAL FRUSTUM.	AFRO	
•	ODOLLA TIMORICATORO CONTRATA PROGRAMA	AERO	
19 196 19	QDDT (3, 1) = QBTC* (PEPSB(1)*TM)**0.8DD/ (DFND M3	*XLA(1) **U.165 AERO	196
	ALC 1	A EPO	
	CO TO 9	'AFPO	128
	TO CENUMADENOMI	AERO	
	CO TO 12	4 °C C	
	11 TEM=XLACII-TEST	AERO	
	K4T=0.901D0&TEM*(-0.867D0&0.966D0*TEM)	AFRO	
Interested to the dis-	CENUM=DENOM2*K4T		
	TM=PS/2116.DC	AERO	
Management was returned	12 QUUT (3, 1) = OBTC* (PEP SB (1) * TM) ** 0.800 / (DENO *)	AFRO	No. 1
	9 CONTINUE	AFRO	
	RETURN	AERO	
		AFRO	207
* 41 ***	FMI:	AERO	208
	روز و من المنظور الم	EL DESERT DESERT AND	A T W H   H   PRESENTANT NAME   Department
	to any one of 1 to thing and 13 part of view of a distribute resident representative recombined representative of the individual rep	Bir 8 to real regionalisation to den bir webs to wide bendernage of the original photocological and the control of the control	Mer et anne a est pulpar persona
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	1700   A 1   A 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1   B 1		
	The state of the s	deter 6 metric et e e e e e e e e e e e e e e e e e e	
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November (Ex Inter )	4 Additional table in the process of		
	t the state of the	The state of the	THE PROPERTY OF THE PARTY OF TH
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ALM SUBROUT INE-ALM	ALM	1.
IMPLICIT REAL +0 (A-H,O-Z)		
COMMON/BLKO/- H(40,40) .X(40) .G(40) .S(40) .XP(40) .GP(40) .T(40) .GB(40)	MIA	3
1.GS. GSP. GTP.GSS. GTT. GSB.F.FP.FB.FC.E. P.TO.RS.SL. Z.Q.A.EL.	MIA	E
SMC TE CAR CAR CAR TO L	. 4	6
COMMUN/BLKI/M, N, L, LS, M1, MS, NS, IT, K, NC	ALM	O -//
	AIM	e e
	MIA	9
High seed delivery (Secretary Street Control Secretary Secre	AIM	. 10
APP S A STATE AND APP AS A STATE OF AS ASSESSMENT OF ASSES		1.1
ESTIMATES THE LOCATION OF THE RELATIVE MINIMUM WITHIN THE	AIH	. 12
INTERVAL SELECTED BY SUBROUTINE READY. THIS LOCATION IS	AIM	13
COMPARED WITH-THE VALUE THAT WOULD BE EXPECTED FROM A PPERPE	d= AIM	1.4
DICULAR STEP*.	AIM	15
distribution of the state of th	MIA	- 16
	AIM	17
-300-Z=GSEGSPE3.0*[F=FP]/EL		18
301 T0=GS/Z	AIM	19
ANTI-CONTRACTOR ANTI-CONTRACTOR CONTRACTOR C	MIA_	20
302 0 = DSQRT(1.0D0-TO*TI)	AIM	21
		. 22
A=(GSPEQ-Z)/(GSP-GSEZ.0*Q)	AIM	23
-303-TU=(EL+1GSP6Z62.0+Q)+A++2)/3.0	" AIM	-
304 FO=FP-TO	AIM	25
-305-CALL MATMP (N.N.H.GP.T)	MIA	26
300 145-024/20	AIM	27
	AIM	28
308 T(I)=-T(I)&TP1*S(I)	· AIM	29
308 T(I)=-T(I)&TP1*S(I) -309 M=1	AIM	30
210 CALL MATMO (M.M.T CO CTO)		31
-311-IF-(2.0*T0&GTP)317-312-312-	AIM .	32
312 TP1=1.0-A	A14	33
313-D0 314- 1=1.0 N	MIA	34
314 T(1)=A+X(1)&TP1+XP(1)	AIM	35
-315-L-41- 100-11-11-11-11-11-11-11-11-11-11-11-11-	MIA.	36
316 NETURN	PIA	37
1 The second of the contract o	AIM	3 B
	AIM	39
-317-IF-(FEGTP/2.0)-312,318,-318	AIM .	40
318 DO 319 I=1;N	MIA	41
319-T-([]=T(-1) &XP(-[-)		
320 M1=2	MIA	43
The state of the s		4.4
321 CALL FCN(N, GB, FB, T, M1)	AIM	45
	AIM	47
m was		48
G() = T(1)	ALM	49
322 IF (FB-F0)323,312,312		50
-323 HRITE (6,1)	AIM	51
324 DO 325 I=1.N		52
325 S(I)=T(I)-XP(I)	AIM	53
325 M=1		54
	AIM	55
-327CALL-MATMP-(M+N+S+G8+GIT)		56
329-IF (GTT) 335, 330, 330	ALM	57
- 347" IF TUITIJJJ 330+330 - 350 mere and an anticomment and anticomment and anticomment and anticomment and anticomment and anticomment and antic		5b
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331 St=-GTP 332 Ft=1.0	AIM 61
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ै। इ.च.च. करा सा इस स्थायक सुरक्षा इ. इ.स. सुरक्षा करूर होता है क्या राज्यक राज्यक सामास्या है कि रो एन सामास्या करके	13 B N 0 4 15 17 18 18 18 18 18 18 18 18 18 18 18 18 18
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SUBROUTINE AR2DIM(N, M, X, XTB, Y, YTB, Z, ZTB)  AR2DIM NOTE THIS HAS ZTB(J, I) — THE LIBRARY HAS Z(I, J) — AR2DI 4 DIMENSION XTB(N) ,YTB(M) , ZTB(M, N) — AR2DI 6  AR2DI 6  AR2DI 7  — SUBROUTINE AR2DIM PERFORMS A LINEAR INTERPOLATION IN A TWO — AR2DI 8 DIMENSIONAL TABLE FOR Z AS A FUNCTION OF X AND Y. — AR2DI 10  AR2DI 12  MM = M-1 — AR2DI 12  MM = M-1 — AR2DI 13  DO S I = 1, NN — AR2DI 14  I = I — AR2DI 15  IF( XTB(IEI) - X - ) 5, 6, 6  P2 = (X - XTB(I) ) / (XTB(IEI) - XTB(I) ) — AR2DI 17  GO TO 7 — AR2DI 17  5 CONTINUE — AR2DI 20  IF( YTB(JEI) - Y ) 9, 10, 10 — AR2DI 21  IF( YTB(JEI) - Y ) 9, 10, 10 — AR2DI 23  -10 P1 = (Y - YTB(J) ) / (YTB(JEI) — YTB(J) ) — AR2DI 24  GO TO 11 — AR2DI 25  -11 Z = (1, DO -PI -P2 - A PI * P2) * ZTB(J, I) & (. P2 -P2 * PI) * ZTB(JAR2DI 28  1, IEI) & (. PI - PI * P2) * ZTB(JEI, I & PI * P2 * ZTB(JEI, IEI) - AR2DI 29  1, IEI) & (. PI - PI * P2) * ZTB(JEI, I & PI * P2 * ZTB(JEI, IEI) - AR2DI 29	CARZDIM INPLICIT_REAL_*	8-(A+h+ 0+2)	AR2DI 1
ARZOIM - NOTE THIS HAS ZTBIJ,   -THE LIBRARY HAS - Z[1, J] ARZOI    OIMENSION XTB(N), YTB(M), ZTB(M, N) ARZOI    ARZOI    ARZOI    ARZOI    ARZOI    ARZOI    ARZOI    ARZOI    DIMENSIONAL TABLE FOR Z AS A FUNCTION OF X AND Y. ARZOI    ARZOI    ARZOI    ARZOI    ARZOI    ARZOI    ARZOI    ARZOI     ARZOI     ARZOI     ARZOI     ARZOI     ARZOI     ARZOI     ARZOI     ARZOI      I = I	SUBROUTINE	ARZDIM(N. M. X. XTB. Y. YTB. Z . ZTB )	APZOI 3
DIMENSION XTB(N), YTB(M), ZTB(M, N)  ARZOI 6  ARZOI 7  ARZOI 8  ARZOI 9  DIMENSIONAL TABLE FOR 2 AS A FUNCTION OF X AND Y.  ARZOI 10  ARZOI 10  ARZOI 10  ARZOI 11  ARZOI 12  ARZOI 12  ARZOI 14  MM = M-1  ARZOI 15  ARZOI 15  I F ( XTB(I&I) - X - 1 - 5 , 6 , 6  ARZOI 17  GO TO 7  ARZOI 19  ARZOI 19  ARZOI 19  ARZOI 19  ARZOI 20  T DO 9 J = 1 , MM  ARZOI 20  T DO 9 J = 1 , MM  ARZOI 20  T P ( YTB(J&I) - Y   9 , 10 , 10  ARZOI 22  GO TO 11  ARZOI 24  GO TO 11  ARZOI 25  ARZOI 26  ARZOI 26  ARZOI 27  ARZOI 27  ARZOI 28  ARZOI 29  ARZOI 20  ARZOI 21  ARZOI 21  ARZOI 22  ARZOI 22  ARZOI 23  ARZOI 24  GO TO 11  ARZOI 25  ARZOI 25  ARZOI 26  ARZOI 27  ARZOI 26  ARZOI 27  ARZOI 28  ARZOI 29  ARZOI 29  ARZOI 29  ARZOI 29  ARZOI 20  ARZOI 20  ARZOI 20  ARZOI 20  ARZOI 25  ARZOI 26  ARZOI 27  ARZOI 28  ARZOI 29  ARZOI 29  ARZOI 20  ARZOI 30  ARZOI 30  ARZOI 32  ARZOI 32	C AR2DIM - NOTE THIS I	HAS ZTB(J. I.) THE LIBRARY HAS ZII. J)	AR2D1 4
SUBROUTINE ARZOIH PERFURMS A LINEAR INTERPOLATION IN A TWD ARZOII B  DIMENSIONAL TABLE FOR 2 AS A FUNCTION OF X AND Y.  ARZOI 19  ARZOI 10  ARZOI 11  ARZOI 12  ARZOI 12  ARZOI 12  ARZOI 12  ARZOI 12  ARZOI 15  ARZOI 16  ARZOI 17  ARZOI 18  ARZOI 16  ARZOI 17  GO 70 -7  CONTINUE  ARZOI 20  ARZOI 21  ARZOI 20  ARZOI 30  ARZOI 31  ARZOI 31  ARZOI 32  ARZOI 32  ARZOI 32  ARZOI 32  ARZOI 32	DIMENSION ALBIA	MI VTOIME PTOIM ME	B - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
SUBROUTINE ARZOIH PERFURMS A LINEAR INTERPOLATION IN A TWD ARZOII B  DIMENSIONAL TABLE FOR 2 AS A FUNCTION OF X AND Y.  ARZOI 19  ARZOI 10  ARZOI 11  ARZOI 12  ARZOI 12  ARZOI 12  ARZOI 12  ARZOI 12  ARZOI 15  ARZOI 16  ARZOI 17  ARZOI 18  ARZOI 16  ARZOI 17  GO 70 -7  CONTINUE  ARZOI 20  ARZOI 21  ARZOI 20  ARZOI 30  ARZOI 31  ARZOI 31  ARZOI 32  ARZOI 32  ARZOI 32  ARZOI 32  ARZOI 32	NAME AND THE PARTY OF THE PARTY	- part - det grantiste en en equera en l'étant en l'étant en les entres entres en l'étant en l'étant en l'étant en les entres entres entres en les entres en	ARZOI 6.
SUBROUTINE—ARZOIM—PERFURMS A LINEAR INTERPOLATION IN A TWO ARZOI & DIMENSIONAL TABLE FOR Z AS A FUNCTION OF X AND Y.  ARZOI A.  ARZOI A.  ARZOI A.  ARZOI A.  ARZOI 13  ARZOI 13  ARZOI 14  ARZOI 15  IF( XTB(IGI)—X-) 5, 6, 6  ARZOI 16  6 P2 = (X - XTB(I) ) / (XTB(IGI) - XTB(I) )  GO TO -7  ARZOI 16  ARZOI 17  GO TO 9 J = 1, MM  ARZOI 20  7 DO 9 J = 1, MM  ARZOI 20  ARZOI 20  IF( YTB(JGI) - Y ) 9, 10, 10  ARZOI 23  IF( YTB(JGI) - Y ) 9, 10, 10  ARZOI 24  GO TO 11  ARZOI 25  GO TO 11  ARZOI 25  ARZOI 26  ARZOI 25  1 IZ = (1.DO -P1 -P2 - E P1 * P2) * ZTB(JR() E (.P2 -P2 * P1) * ZTB(JRAOI 26)  LIGI) E (.P1 - P1 * P2) * ZTB(JR() E (.P2 -P2 * P1) * ZTB(JRAOI 26)  ARZOI 31  RETURN  ARZOI 32  ARZOI 32  ARZOI 32  ARZOI 32  ARZOI 32  ARZOI 32	•	•	ADSOT T
DIMENSIONAL TABLE FOR 2 AS A FUNCTION OF X AND Y.  ARCOL 10  ARCUL 12  MM = N-1  MM = M-1  OD 5 - I = 1, NN  ARCUL 13  ARCUL 14  1 = 1  IFF ( XTB(IE11 - X - J - 5, 6, 6  ARCUL 14  ARCUL 15  GO YO - 7  CONTINUE  ARCUL 24  ARCUL 25  ARCUL 24  ARCUL 26  ARCUL 26  ARCUL 27  ARCUL 28  ARCUL 29  CONTINUE  ARCUL 29  CONTINUE  ARCUL 20  ARCUL 30  ARCUL 30  ARCUL 30  ARCUL 31  ARCUL 32  ARCUL 32	SUBROUTINE-A	AR2DIM-PERFORMS A-LINEAR_INTERPOLATION_IN_A_I	THD= ARZDI 8.
ARCUI & ARCUI	DIMENSIONAL TA	ABLE FOR 2 AS A FUNCTION OF X AND V.	APANT O
ARCUI & ARCUI	D 111 - Mr. 1001	nd - a land on the not be not been takened takened by	ARZDI 10
NN = N-1  MM = N-1  DO 5 I = 1, NN ARZDI 13  ARZDI 13  ARZDI 15  IF( XTB([E1] - x -) . 5, 6, 6  P2 = (X - XTB(I) ) / (XTB(IE1) - XTB(I) )  GO TO 7  ARZDI 16  ARZDI 17  GO TO 7  ARZDI 18  ARZDI 19  ARZDI 20  TO 9 J = 1, MM  J=J  IF( YTB(JE1) - Y ) 9, 10, 10  ARZDI 23  IF( YTB(JE1) - Y ) 9, 10, 10  ARZDI 24  GO TO 11  ARZDI 24  GO TO 11  ARZDI 25  P - CONTINUE  ARZDI 26  ARZDI 27  11 Z = (1.DO -P1 -P2 & P1 * P2) * ZTB(J; () & (.P2 -P2 * P1) * ZTB(JARZDI 28  1 - IE1) & (.P1 - P1 * P2) * ZTB(J£1, IE1) ARZDI 27  ARZDI 30  ARZDI 31  RETURN  ARZDI 32  ARZDI 32  ARZDI 33  ARZDI 33  ARZDI 33  ARZDI 32			. A0 - 117
MM = M-1	NN - N-1	the CE - British Market British S.	ARZUI 12
1 = 1			ARZDI 13
IF( XTB(IE1) - X - ) - 5, 6, 6  P2 = (X - XTB(I) ) / (XTB(IE1) - XTB(I) )  GO TO -7  GO TO -7  ARZDI 17  ARZDI 17  ARZDI 18  5 CONTINUE  ARZDI 19  ARZDI 19  ARZDI 19  ARZDI 19  ARZDI 20  ARZDI 21  ARZDI 22  IF( YTB(JE1) - Y ) 9, 10, 10  ARZDI 23  -10 P1 = (Y - YTB(J)) / - ( YTB(JE1) - YTB(J) )  GO TO 11  ARZDI 25	00 5 1 2 1	NN - and the substitution of the contract of t	ARZUL 14.
6 P2 = (X- XTB(I) ) / (XTB(IGI) - XTB(I) ) GD TO 7 A	1 = 1		ARZDI 15
6 P2 = (X- XTB(I) ) / (XTB(IGI) - XTB(I) ) GD TO 7 A	- IF( XTB(I&1)	-X-1-5, 6, 6	ARZDI 16
GO TO-7  CONTINUE  AR201 19  AR201 20  7 DO 9 J = 1, MM  AR201 21  J=J  IF( YTB(J&1) - Y ) 9, 10, 10  AR201 23  -10 P1 = (Y- YTB(J)) /- (YTB(J&1) - YTB(J))  GO TO 11  AR201 25	6 P2 * (X- XTB(1)	) ) / (XT8(I&1) - XT8(I) )	
5 CONTINUE  AR2DI 19  AR2DI 20  7 DD 9 J = 1, MM  J = J  IF ( YTB(J£1) - Y ) 9, 10, 10  AR2DI 23  10 P1 = (Y- YTB(J)) / ( YTB(J£1) - YTB(J) ) AR2DI 24  GO TO 11  AR2DI 25  -9 CONTINUE  AR2DI 27  11 Z = (1.DO -P1 -P2 & P1 * P2) * ZTB(J, 1) & ( .P2 -P2 * P1) * ZTB(JAR2DI 28  1.IE1) & ( P1 - P1 * P2) * ZTB(J£1, 1] & P1 * P2 * ZTB(J£1, 1£1) AR2DI 29  13 RETURN  AR2DI 31  AR2DI 32  AR2DI 32  AR2DI 33  AR2DI 32	- GO TO-7 -	the second and the following the second seco	
ARZOI 20	5 CONTINUE		
7 DO 9 J = 1, MM  J=J  IF( YTB(J£1) - Y ) 9, 10, 10  AR2DI 22  1F( YTB(J£1) - Y ) 9, 10, 10  P1 = {Y- YTB(J)} / ( YTB(J£1) - YTB(J) } AR2DI 25  GO TO 11  AR2DI 26  AR2DI 26  AR2DI 27  AR2DI 26  AR2DI 27  11 Z = {1.DO -P1 -P2 - 6.P1 * P2} * ZTB(J,I) 6 (.P2 -P2 * P1) * ZTB(JAR2DI 28  1.I61) 6( P1 - P1 * P2) * ZTB(J£1,I) 6 P1 * P2 * ZTB(J£1,I£1) AR2DI 29  AR2DI 30  AR2DI 31  END.  AR2DI 32	). Protes historica nincut (on equiplica ninoles or		
J=J	7 DO 9 J =1. MM		
IF( YTB(JE1) - Y ) 9, 10, 10  -10 P1 = (Y- YTB(J)) /- (YTB(JE1) - YTB(J) ) ARZUI 24  GO TO 11		attack does to be the second of the second o	ARJOI EL
-10 P1 = (Y- YTB(J)) / (YTB(JE1) = YTB(J)) AR2UI 24 G0 T0 11 AR2UI 25 AR2UI 26 AR2UI 26 AR2UI 26 AR2UI 27  11 Z = (1.D0 -P1 -P2 & P1 * P2) * ZTB(J,I) & (.P2 -P2 * P1) * ZTB(JAR2UI 28 1.IE1) & (.P1 - P1 * P2) * ZTB(J&I,I) & P1 * P2 * ZTB(J&I,IE1) AR2UI 29 AR2UI 30 AR2UI 31 AR2UI 32 END. AR2UI 32	TF( YTB(JE1) -	Y 1 9, 10, 10	ADDOT 12
GO TO 11	-10 P1 = (Y= YTB(J))	)-/(YTB(.I&1)	APPUL DA
Q CONTINUE  AR2DI 26.  AR2DI 27.  11  Z = {1.DO -P1 -P2			
AR201 27  11 Z = (1.D0 -P1 -P2 & P1 * P2) * ZTB(J.[) & (.P2 -P2 * P1) * ZTB(JAR201 28  1.IG1) & (.P1 - P1 * P2) * ZTB(J&1.[) & P1 * P2 * ZTB(J&1.[&1]) · AR201 29  AR201 30  AR201 31  AR201 32  13 RETURN  END.  AR201 31  AR201 32	60 70 11		AREUL ED
11 Z = (1.DO -P1 -P2 & P1 * P2) * ZTB(J,[) & (.P2 -P2 * P1) * ZTB(JARZDI 28 1.161) & (.P1 - P1 * P2) * ZTB(J&1,[) & P1 * P2 * ZTB(J&1,[&1]) · ARZDI 29 ARZDI 30 ARZDI 31 ARZDI 31 ARZDI 32			
	11 - Z = (1.00 -P1 -P 1.161) &( P1 - P1	P2E.P1 * .P2) * ZTB(J.I) & (.P2 -P2 * P1) * 1 * P2) * ZTB(J&1,I) & P1 * P2 * ZTB(J&1,I&1	ARZDI 27 ZTB(JARZDI 28. L) ARZDI 29 ARZUI 30.
	9 CONTINUE  11 Z = (1.DO -P1 -P  1.161) &( P1 - P1  13 RETURN  END	P2 -& P1 * P2) * ZTB(J,[) & (.P2 -P2 * P1) * 1 * P2) * ZTB(J&1,[) & P1 * P2 * ZTB(J&1,[&1]	AR2DI 27 ZTB(JAR2DI 28. 1) - AR2DI 29 AR2DI 30. AR2DI 31 AR2DI 32.
	9 CONTINUE  11 Z = (1.DO -P1 -P  1.161) E( P1 - P1  13 RETURN  END:	P2 & P1 * P2) * ZTB(J.I) & (.P2 -P2 * P1) * 1 * P2) * ZTB(J&1.I) & P1 * P2 * ZTB(J&1.I&1	AR201 27 ZTB(JAR201 28 1) AR201 29 AR201 30 AR201 31 AR201 32
	9 CONTINUE  11 Z = (1.DO -P1 -P  1.161) E( P1 - P1  13 RETURN  END:	P2 & P1 * P2) * ZTB(J,I) & (.P2 -P2 * P1) * 1 * P2) * ZTB(J&1,I) & P1 * P2 * ZTB(J&1,I&1)	AR201 27 ZTB(JAR201 28 1) AR201 29 AR201 30 AR201 31 AR201 32

CARSDIM	ARBOI	1
FUNCTION ARBDIMO , N20, M20, N10 , ROW, H , EM , XYZTBL )	ARBOL	
UIMENSIUN O(N2O+ M2O+ N1O ) XYZTBL (-11+3)	ARSOL	3
C MAINTAIN OF HEAL MEAL MACHINE ALVIE 100 ( 1713) - WINDOWS CONTRACTOR OF THE PROPERTY OF THE	ARBOL	6
ing the manager of the manager than the mechanisms of the filter of the state of the filter of the mean of the filter of the filter of the mean of the filter of the filte	AHROL	6
FUNCTION ARBOIM IS THE RESULT OF A TABLE LOOK-UP EMPLOYING	ARBUI	7
-C LINEAR INTERPOLATION TO DETERMINE THE VALUE OF A DEPENDENT	ARBDI.	<u></u>
C VARIABLE WHICH IS A FUNCTION OF THREE INDEPENDENT VARIABLES.	ARBUI	9
	ARBUI	10
C	ARSOL	11
DO 1 I=2, N10	AK3DI	12
i=1	ARBDI	13
	AKSUL.	.14
1 CUNTINUE	ARSUI	15
Control of the contro	ARSUI	16
[ = N10	ARBDI	17
- WRITE(6,1000) - XYZTBL(1,3)	ARBDI	
1000 FORMATE THE VALUE OF M-RAT IS GREATER THAN THE M-RAT VALUE	AR3D1	19
C 2 CONTINUE	ARSOL	
The last of the second	ARODI	
I = I-1 CALL AR2DIM( N2O, M2O, ROW, XYZTBL(1,1), H, XYZTBL(1,2),	AH3DI	
1 ANS1 + D(1-1-11) )	AKSUL	
	AK-DI	-
minute in the control of the control	ARSOL	4 D
	10201	. 7
1 ANS2 . D(1,1,1) )	ARSOL	
1 ANS2 . D(1,1,1) ) AR3DIM = (ANS1 * (XYZTBL(11,3) EM) & ANS2 * (EM - XYZTBL(11,3)	AKSDI	28
1 ANS2	ARSDI ARSDI	28
1 ANS2 . D(1,1,1) )  AR3DIM = (ANS1 *(XYZTBL(1,3) - EM) & ANS2 * (EM - XYZTBL(11,3) 1) ) / ( XYZTBL(11,3) -XYZTBL(11,3) )  RETURN	ARSDI ARSDI ARSDI	28 29 30
1 ANS2	ARSDI ARSDI ARSDI	28 29 30
1 ANS2 . D(1,1,1) )  AR3DIM = (ANS1 *(XYZTBL(1,3) - EM) & ANS2 * (EM - XYZTBL(11,3) 1) ) / ( XYZTBL(11,3) -XYZTBL(11,3) )  RETURN	ARSDI ARSDI ARSDI	28 29 30
1 ANS2 . D(1,1,1) )  AR3DIM = (ANS1 *(XYZTBL(1,3) - EM) & ANS2 * (EM - XYZTBL(11,3) 1) ) / ( XYZTBL(11,3) -XYZTBL(11,3) )  RETURN	ARSDI ARSDI ARSDI ARSDI ARSDI	28 29 30
1 ANS2	ARSDI ARSDI ARSDI ARSDI ARSDI	28 29 30
1 ANS2	ARSDI ARSDI ARSDI ARSDI ARSDI	28 29 30
1 ANS2 . D(1,1,1) )  AR3DIM = (ANS1 *(XYZTBL( I,3) - EM) & ANS2 * (EM - XYZTBL( II,3) 1) ) / ( XYZTBL( II,3) - XYZTBL( II.) ) }  C  RETURN  END	ARSDI ARSDI ARSDI ARSDI ARSDI	28 29 30
1 ANS2	ARSDI ARSDI ARSDI ARSDI ARSDI	28 29 30
1 ANS2	ARSDI ARSDI ARSDI ARSDI ARSDI	28 29 30
1 ANS2 . D(1,1,1) )  AR3DIM = (ANS1 *(XYZTBL( I,3) - EM) & ANS2 * (EM - XYZTBL( II,3) 1) ) / ( XYZTBL( II,3) - XYZTBL( II.) ) }  C  RETURN  END	ARSDI ARSDI ARSDI ARSDI ARSDI	28 29 30
1 ANS2	ARSDI ARSDI ARSDI ARSDI ARSDI	28 29 30

CAVPL	T PROGRAM 2542	A 1 4 PM
CAVPL	T WITH CORE REMOVED SEPT. 11. 1968	AVPLT 1
CAVPL	The state of the s	AVPLT 2 AVPLT <del>-3-</del>
	SOUNDOLLING WARE (TYRAIS AXAA TY VE A IC.)	AVPLT 4
P 151 471	IMPLICIT REAL*8(A-H;0-Z) COMMON OCCUR, NOCCUR	AVPL-T5
	COMMON /CPCCUR/ PCCUR(11770)	AVPLT 6
	COMMON /CICCUR/ IOCCUR(320)	
	REAL#4 B.81.82.63. XQ	AVPLT 8
,	DIMENSION XQ(40), 10P(90)	AVDLT 10
	DIMENSION B1(18),B2(10),B3(10),IC(1), H01D(3,50),I7(1)	AVPLT 10
	DIMERSION NOCCOR(30) + NEV(160) + OCCUR(4000) + R(3) + SAVE[9+160+31+	AVPLT 12
MARKET R. ST. L. M. S. SP. L.	1 (9(160)	AVPLT 13
	DIMENSION X(1),Y(1),Z(1),ZPLOT(160)	AVPLT 14
MIC II MARROUSE PROPERTY OF THE SERVICE	DIMENSION T(200) EQUIVALENCE (PCCUR(07101), HØLD )	AVPLI 15
		AVPLT 16
· I feet	EQUIVALENCE (PCCUR(07251), SAVE ) EQUIVALENCE (PCCUR(05561), T )	
was to be worst	EQUIVALENCE (PCCUR(00161), ZPLØI)	AVPLT 18
	EGOIVALENCE (ISCCUR(00308), II )	AVPLI 19
to consider a separativa attenuações autoria	EQUIVALENCE (IOCCUR(00309), IMPLOT)	AVPLT 21
	EOUIVALENCE (ICCCUR(00001), IUP )	ANDIT TO
	EQUIVALENCE (IOCCUR(00310), JJ )	AVPLT 23
	- 401 AVEUNCE (1000 CORTOOD) [3] • KX	AMDIT 37
* *	EQUIVALENCE (10CCUR(00302), LPLOT) EQUIVALENCE (10CCUR(00312), NCON )	
	EQUIVALENCE (INCOUR(00305), NDECOY)	AVPLT 26
AMERICAN H. H. SARBANDO HARADO HARADA	TEQUIVALENCE (10CCUR (00307) , NPA )	AVPLT 27 AVPLT 28
	ECHIIMALENCE ATMOCHIDAGOLALA ALDIA	
	DATA B/4H /	AVPLT 30
	The second secon	AVPLT 31
Č		AMDI T 12
	SUBROUTINE AVPLT CAN PRODUCE FOUR KINDS OF PLOTS, DEPENDING	AUDI T 22
C	ON THE VALUE OF KY. IF KY=1. INFLUENCE COEFFICIENT PLOTS WILL	AVPLT 34
<del></del>	THE PREPARED AT A SPECIFIED NUMBER OF ALTITUDES. NPA. IF KY=2. ONE CORRIDOR PLOT IS PRODUCED. IF KY=3. ONE PLOT OF Y VS. X	AVPLT_35
- č	IS PRODUCED. IF KY=4. ONE PLOT OF LOG(Y) TO THE BASE 10 VS.	AVPLT 36
C	A WILL DE PRODUCED. THE KYMS. THE DIGT FILE WILL DE CLUCCO AND	AVPLT 37
C	THE COMPUTER RUN WILL BE TERMINATED.	AVPLT 38
C	The off makes at the first specific and the first specific and the second spec	AVPLT 40
C	DENIAL O	
	TECHNOLOGY NE ON COMMON TO	AVPLT 42
	IF(IMPLOT.NE.O) GO TO 10	AVPLT_43
	CALL IDERMY(12HLØRAYNE K210,2H ,8H2542F ) IMPLOT = 1	AVPLT 44
C	A C T T T T T T T T T T T T T T T T T T	AVPLT 45
č		AVPLT 46
10	GO TO (20,20,110,110,230), KY	AVPLI 47
20	CONTINUE	AVPLT 48 AVPLT 49
	MRITE (9,2000) IC(1), IC(2)	AVPLT 50
	00 33 I = 1: 19 JP = I	AVPLT 51
	•	AVPLT 52
33	IF(IZ(I).EO.NCON) GO TO 40 CONTINUE	AVPLT 53
	JP = 0	AVPLT 54
-	GO TO 45	AVPLT 55
40	JS = JP + JP	AVPLT 56
	JR = J5 +1	AVPLT 57 AVPLT 58
	IF(KY-EQ-2) G0 T0 70.	
45	IFIN TO COOK IN 10 /()	AVPLT 50

C	W(1) = HØLD(1,11)	AVPLT 61 AVPLT 62
	W(2) = HOLD(2,11)	AVPLT 63
(i-blee)date réseau in my	W(3) = HOLD(3, LI)	AVPLT 64
	D0 66 I 1 NPA	AVPLT 65
an derverentarione	J = NPV(I)	AVPLT 66
	R(1) = SAVE(JJ,J,1)	AVPLT 67
	R(2) = SAVE(JJ.J.2)	AVPLT 68
	R(3) = SAVE(JJ.J.3)	AVPLT 69
THE STATE OF STREET	WRITE(9,2100)(OCCUR(L),L=127,129),ZPLØT(J)	AVPLT 70
	11.04#E6#01 OF 10 DO	AVPLT 71
paper procession (see	WRITE(9.2200) XQ(JR). XQ(JS)	AVPLI 72
* *	GØ TØ 55	AVPLT 73
50	WRITE(9,2300) NCOM	AVELT 74
55	ENDFILE 9	AVPLT 75
<b>*</b> **** ******************************	REWIND 9	AVPLT 76
	READ(2, 3100) B2	AVPLT 77
M1 -1 11100 4000	READ(9, 2900) B1	AVPLI 78
	READ(9, 3100) B3	AVPLT 79
	REWIND 9	AVPLT 80
_	IF(I@P(76).EQ.1) GØ TØ 60	AVPLT 81
<u></u>	The state of the s	AVPLI 82
	$XL = DMINI(W(1) \cdot W(2) \cdot W(3))$	AVPLT 83
-	XU = DMAX1(W(1),W(2),W(3))	AVPLT 84
	YL = DMINI(R(1),R(2),R(3))	AVPLT 85
***************************************	YU = DMAX1(R(1),R(2),R(3))	AVPLT 86
	XU = (XU -XL)/8.00 XL = XL -XU	AVPLT 87
retained discount	YU = (YU -YL)/8.00	AVPLT 89
	YL = YL -YU	AVPLT 89
<del>Ba</del> laco an escan	CALL PLT(1,0,XL,XU,W,0,25,YL,YU,7,0,R,70,B1,40,B3,40,B2)	AVPLT 90
	CALL PLT(2,3,1)	AVPLT 91
Samesument of the	CALL PLT(5:12,PLTIM)	AVPLT 92
	THE PARTY OF THE P	AVPLT 93
ggart att er rejendermesse	WRIE(6,3000) PLTIM  60 T0 66	AVPLT 94
C	00 10 00	AVPLT 95
60	CALL EZPLOT (9.,1,1,W,R,3,1,1,55,70,B1,40,B3,40,B2,1,1,XL,XU,1,	AVPLT 96
	1YL+YU+1+0+1)	AVPLT 97
Č	A PACE OF THE PACE	AVPLT 98
66	CONTINUE	AVPLT 99
prin teat emperorane	RETURN	AVPLT100
C		AVFLT101
C		AVPL 1102
Ċ		AVPLT103
ď		AVPL T104
70	XU = ZPLOT(1)	AVPLT105
. ~ .	XL = ZPLOT(LPLOT)	AVPL T106
	CALL MAXMIN(KX,KX,X ,XMIN,XMAX)	AVPLT107
me Principle on Higgs Street	CALL MAXMIN(KX.KX.Y .YMIN.YMAX)	AVPLT108
	CALL MAXMINIKX,KX,Z ,ZMIM,ZMAXI	AVPLT109
er e veze altro in susce	YL = DMIN1 (XMIN, YMIN, ZMIN)	AVPLILLO
	YU = DMAX1 (XMAX, YMAX, ZMAX)	AVPLT111
	WRITE(9,2500)	AVPLT112
	IF (NDECOY .GT .1) GO TO BO	AVPLT113
	WRITE(9,2400)(ØCCUR(L),L=127,129)	AVPLILLA
	GP TO 95	AVPLT115
80	1F(JP.EQ.0) GØ TØ 90	AVPLILL6
	JT = 17(JP)	AVPLT117
T 10011 1888 1984	WRITE(9,2600)(@CCUR(L),L=127,129),XQ(JR),XQ(JS),@CCUR(JT)	AVPLT118.

90	GO TO 95 WRITE(9,2700)(OCCUR(L),L=127,129),NCON,OCCUR(NCON)	AVPLT120 AVPLT121
95	ENDFILE 9	AUGU TITE
	REWIND 9	AVPLI123
	READ(9, 3100) B2	AVPLT124
	READ(9, 3100) 83	AVPLT125
	VEVOLAT SAGOT RE	AVPLT126
el desc <b>ensión appropri</b> ent est est est	REVIND 9	AVPL T127
	1F(10P(76).EG.1) 60 T0 100	AVPL T128
C	The short state of the state of	
	XU = (XU-XL)/8.0D0	AVPLT130
·	XL = XL -XU	AVPL T131
	$YU = (YU - YL)/8 \cdot DO$	ALICH TEGO
rydery (ell y el roll enhantlik el inderjor	YL = YL +YU	AVPLT133
	NF = 123	AVPL T134
-50 - 1	CALL PLT(1,0,XL,XU,T,0,NF,YL,YU,4,1,X,YL,YU,4,1,Y,YL,YU,4,1,Z,	AVPLT135
	1 /U+B1.8+B3.4B.4B.4B.4B.4B.4B.4B.4B.4B.4B.4B.4B.4B.	AVPLT136
	CALL PLT(2.1.X.1)	
	CALL PLT(5,12,PLTIM)	AVPLT138
ole is divinitable on a subsequence	WITE16.3000) PLILM	_AVPLT139.
	RETURN	AVPL T140
100	CALL EZPLOT(9. +1+1+T, X, KX+1+2+42+70+81+40+83,40+82+1+2+XL+XU+2	_AVPLT141
	14YL, YU, 1, 0, 1)	AVPLT142
	CALL EZPLOT (9. 01 01 0 T 0 Z 0 KX 01 0 2 0 4 2 0 1 0 B 0 1 0 B 0 2 0 - 2 0 XL 0 XU 0 - 2 0 YL 0 YL	LAVPLT143
	1 1.0.1)	AVPLT144
	CALL EZPLOT(91.1.T ,Y,KX ,1.2.42,1,E,1,B,1,B,2,-2,XL,	AVPLT145
	1 XU,-2,YL,YU,1,0,1}	AVPLT146
10000-1-1	RETURN	AVPLT147
C		AVPLT148
C	The additional of the control of the	_AVPLT149.
(		AVPLT150
1.1 C		AVPLI151
	IF(1C(1).EQ.O.AND.KY.EQ.4) N = 2	AVPLT152
	DØ 111 J = 2. LPLOT	AVPLT153
	IF(Y(J-1).NE.Y(J))GØ TØ 120	AVPLT154
111	CONTINUE	AYPLT155
120	RETURN	AVPLT156
120	00 121 t = 1 + LPLOT	AVPLI157
121	V(1) = Y(1)	AVPLT158
121		
	IF(N.NE.2) G0 T0 125	AVPLT160
	IF(KY+NE+4) GO TO 125	_AVPLT161
	IF(IC(1) • NE • 0) GØ TØ 125	AVPLT162
<del>                                      </del>	D0 122 [ = 1, LPL0T W(I) = DL0G10(W(I))	AVPLI163
122	CONTINUE .	AVPLT164
125	CONTINUE	AVPLT165
لر سه ښ	WRITE(9,2800)(ØCCUR(L),L=127,129)	AVPLT166
	ENDFILE 9	AVPLI167
	REMIND 9	AVPLT168
-	READ(9, 2900) B1	AVPLT169
	REMIND 9	AVPLT170
	IF(10P(76).EQ.1) GØ TØ 130	AVPL 1171
С		AVPLT172
************	XU = (ZPL@T(1)-ZPL@T(LPL@T))/8.DO	AVPL 7173
	XL = ZPLOT(LPLOT) -XU	AVPLT174
-	CALL MAXMINITEREST LEPLOT , WAYMIN , YMAXI	AVPLT175 AVPLT176
	YU = (Y AAX - YMIN)/8.00	AVPLT176
	AL AMIN AAA	ハカルピ きぎょく

	CALL PLT(1,0.XL,XU,X,0.25,YL,YU,4,0.W,70,B1,40,B3,40,B2)  CALL PLT(2,LPLDT,1)	AVPL T179 
ACTION OF THE PERSON AS A SECONDARY	CALL PLT(5,12,PLT1M)	AVPL T181
mar medical file field	WRITE(6,3000) PLTIM	_AVPLI182
	RETURN	AVPLT183
130	CALL EZPLOT (9.,1.N.X.N.LPLOT,1.2.38,70.81.40.XQ,40.1Z.1.1.XL.XU.	LAVPL T184
	1YL+YU+1+0+1+	AVPL T189
	RETURN	AVPL T186
C		AVPLT187
C	The state of the s	AVPLT185
C		AVPL T135
230	IF(10P(76).E0.1) GØ TØ 240	_AVPLT190
	CALL PLT(6)	AVPLT191
nie i elektronispische en	CALL EXIT	AVPLI192
	RETURN	AVPLT193
<u>C</u>	The state of the s	AVPLT194
		AVPLT195
260	TALL TO ALLY IN	_AVELT190
240	CALL FRAMEV	AVPLT19
deliterar years out charmingers.	CALL ENDIAGE	AVPLT19
	CALL PLIND	AVPLT199
	PETURN	AVPL1200
_		AVPLT201
Ç	1 11 4 777 AVE 11 WEIGH ON THE PRINT OF THE	AVPL T293
<u>( </u>		AVPL T203
200	CALLES A PART PART PART A A A A PART A PART	AVPL T204
2100	FORMAT(1H 5HDELTA 2A4 27X)	AVPLT205
41VV	FORMAT(1H 5HDATE F9.3. 6H CASE F9.3.6H MEMØ F9.3. 10H ALTITUDE 1 F9.1. 9X)	AVPLT200
2200	*	AVPL T201
2300	FORMAT(1H 2A4+ 32X) FORMAT(1H II2+ 28X)	AVPLI208
	FORMAT(1H 5HDATE F9.3. 6H CASE F9.3. 6H MEMO F9.3. 28X)	AVPL T2U9
2500	FURNATION BHALTITUDE 32X)	AVPLT210
2600	FURMAT(1H SHDATE F9.3, 6H CASE F9.3, 6H MEMØ F9.3, 1X 2A4, 1X	AVPLT211
1001	1 F10.2, 8X)	AVPL T21: AVPL T21:
2700	FURRMAT(1H 5HDATE F9.3.6H CASE F9.3. 6H MEM2 F9.3. 1X 18. 1X	AVPL T214
15 7 67 6.	1 F10.2. 8X)	AVPLT21
2800	FURMATION BOURESULTS OF PROGRAM 2542F DATE F9.3. 6H CASE F9.3.	AVPL 121
anger a ville of savia is	1 6H MEMO F9.3. 3X)	AVPL T21
2900	FORMAT(1H 18A4)	
3000	FWRMAT(1HO BHPLWTIN = F10.4)	AVPLT219
3100	FORMAT(1H 10A4)	AVPLT220
- 1	of 11 mg Charles and the control of	AVPLT22
स्रोकेत्रकात्रका प्रश्ना । अस्त्रका स्थान व स्थानिक स्थान । स्थान स्थान		
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		BESSE	Ţ	
1000 A 10 ES - 1 PO M	IMPLICIT REAL 48 -(A=H+O=Z)	#E\$3E	2 -	H   1 A A 48
	- unionisting Georgi (Yu. Yi.C.N./MDA./MID.	00336	3	
	(T) as a series of the first of the series o	- BESSE	4	v 900 H119
1	STAR MET THAT THE ME OF SERVICE SHIP OF OR SERVICE SHIP OF THE SER	<b>めたろうじ</b>	5	
· · · · · · · · · · · · · · · · · · ·	The state of the s	BESSE	6	1 4 895
ē		ねたシンド	7	
	SUBROUTINE BESSEL CALCULATES FOR COMPLEX ARGUMENTS THE BESS	SELBESSE.	B.	i a m <del>ulti ja</del> oti micatolica
r	SUNCTIONS OF INTEGRAL ORDER JERO THROUGH THENTY-FOUR. JNABE:	9 05225	9	
Č	TS CALLED TO CALCULATE THE BESSEL FUNCTION OF MAXIMUM URDER!	N. BESSE	10	
~	AND DE V-1. THEN A RECURSIVE FORMULA IS USED TO CALCULAID	0E22E	* *	
	EACH DIMINISHING UNDER UNTIL THE ZEROTH ORDER IS DETERMINED.	BESSE		
Č		REPPE	13	
	NI#NGI	BESSE		
	Rayk**26x1**2	BESSE		
	IF (B) 2,4,2	- BESSE		10 10 10
		BESSE	17	
4	ZNRG(N1, IT)=0.000	. UESSE	18	• 11
	**** * * * * * * * * * * * * * * * * *	86336	17	
	ZNIO(N1, II) *0.000 ZNRO(N, II) =0.000	BeSSE	20	
	AND AND IT IND ADD	86236	41	
	GO TO 5	BESSE	22	+ + 10 00
_		ねにフラに	23	
	CONTINUE	BESSE	64	94.1
	CALL JNXBES(XR, XI, N, C, ZNRO(N1, IT), ZNIO(N1, IT)) NN=N-1	BESSE	25	
	NMEN MET	BESSE	20	
	CALL INVOCCIVE YI NN. C. 7NRO(N. LT). 7N (O(N. LT))	90270	47	
rest.	XKB=XK/B	BESSE	28	
peri			29	
C		- BESSE	30	- 14
		Mark C fil	- 4	
	D() 1 1=2.N NN=N=1	BESSE	-32	1998 1998 TRREE 1
	THE PROPERTY OF THE PROPERTY O	BESSE	22	
	NNI=NN&1	BESSE	34	(i -0 )
	NN2=NN62	BESSE	3 5	
	61612 - 1181 C 2	おおらろも		
	ZNRO(NN1, IT) = 2.00 + XNN + (ZNRO(NN2, IT) + XRB-ZNIO(NN2, IT) + XIB) - ZNRO(	NN30655E	37	
		86224	38	Jan 1998
	ifrs	ULSSE		
1	ZNIO(NN1, IT)=2.DO*XNN*(ZNRO(NN2, IT)*XIBEZNIO(NN2, IT)*XRB1-ZNIO(	AN3RE2 2F	40	
	<i>t</i> .	85225	4 1	
	TT (Salata) and the salata set of the salata series and the salata series are the salata	BESSE		
	OCTION	BESSE		
	END : The same transportation confidence and transportation and the same transportation and transportation and transportation and transportati	BESSE	44	
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	and the state of t			pt 1
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	The responding title in the specialistic continues to the contraction of the contraction	1 1	*1 I	41.47

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CCHNTP
                                                                                  CHNTB
         IMPLICIT REAL+8 (A-H,0-2)
                                                                                  CHNTS
                                                                                  CHNTR
       SUBROUTINE CHNTBLIDYALLE, ZTURNX, LCHNGE)
                                                                                  CHNTR
       REAL+B LAMDA, LA, NSL, NGL, NST, NGT, LAMDAL, LA FDAZ, LAI, LAZ, LAIF, LAMCIF
                                                                                  CHNTB
                                                                                  CHNTR
C
                                                                                  CHNTR
                                                                                  CHNTR
                TXCGD (50), TABIJ 50), TABIX (50), TABZ (50), TW(4,8),
                   DCCUR (4000) , NOCC UR (30) , 0 VALUE (16) , TABIX1 (50) , TAEIX2 (50) CHNTB
                                                                                          0
                                                                                  CHNTB 10
                  , TXCGD1(50), TXCGD2(50), TABT1(50), TABI2(50), TABI2150),
                                                                                  CHNTB 11
                   TABZ 21 5C)
                                                                                  CHNTR 12
                                                                                  CHNTR 13
       EQUIVALENCE
                                                                                  CHNTR 14
      110CCUR(CQ4), BETA1 1, (OCCUR(QC5), BETA2 ), (CCCUR(QC6), BTTA3 ),
                                                                                  CHNTB 15
      2(OCCUR(007), BETA4 ), (OCCUR(008), COST ), (CCCUR(014), CP2
                            ), (OCCUR (022) , DELRHO) , (CCCUR (023) , DELHC ),
                                                                                  CHNTR 16
      2(000UR(015),0PG
      4(OCCURIO24), EPSIL 1, (OCCURIC25), F
                                                                                  CHNTS
                                                                                         17
                                                                                  CHNTB 18
       EUU IVAL ENCE
                            ). (OCCLR (032) .LAMDA ). (CCCUR (033) .LA
                                                                                  CHNTR 19
      ICOCCURTO30), HKEF
                                                                                  CHNTB 20
      21 OCCUR ( 638) , N SL
                            ). (DCCLR (039) .NGL ) . (CCCUR (040 ) .NST
                                                  1,(CCCUR(0521,RN
                                                                                  CHNTB 21
                            ) . (UCC UR ( 042) .PI
      3(OCCURIO41),NGT
                            ), ( CCC UR ( 054) , RESINT) , ( CCCUR ( 058) , RHC2
                                                                                  CHNTB 22
      4COCCUREC531.RB
                            ), (DCC UR ( 066) , SQC OST) , ( FCC UR ( 069) , THETAE) ,
                                                                                  CHNTB 23
      SECCOURTUE41, SINT
                                                                                  CHNTB 24
                            1, (DCC UR (D73) , THS TAG) , (CCCUR (974), TWO
      61 DCC URIOTU I, TANT
      TERCEUREUTA 1, LOCC LR ( C84) . W
                                                 1 + ( CCCUR(085) +WO
                                                                                  CHNTS 25
                                                                                  CHNTB 26
      8(OCCUR(124), CMOIN1), (OCCUR(125), CMQIN2)
                                                                                   CHNTB
                                                                                         27
       FOUTVALENCE
                                                                                  CHNTB 28
       1(OCCUR(133),WI
                            ), (DCC LR (134), THE TALL, (CCC UR (135), RN1
                            ), (OCC UR (137) , LAMDALL . ( CCC UR (138 ) . LAL
                                                                                   CHNTB 29
      2(CICCUR(136) RR1
                            ), (OCC LP (14() ,THF T\2) , (CCCUR(141) ,RN2
                                                                         ١,
                                                                                  CHNTR 30
      3(OCCUR(139), W2
                            ), (OCC LR (143) , LAMDA2) , (CCC UR (144) , LA2
                                                                                   CHNTB 31
      4(OCCUR (142) + RB2
                            ), (OCCUR(146), LAIF ), (CCCUR(147), RBIF
                                                                                   CHNTB
                                                                                         32
      SCOCCUR(145), ZTURN
      6(OCCUR! 149), TW1
                            ), (OCC UR (156), THE TIF), (CCCUR(151), LAMDIF),
                                                                                   CHNTR 33
                                                                                   CHNTR
                                                                                         34
                            ), (OCCUP(169), RN1F ) ~ (CCCUR(170), W1F
       7[OCCUR{ 168]. TW2
                                                                                   CHNTS 35
       EQUIVAL ENCE
       1(OCCUR(190), FAC TR 2), (OCC LR (191) , FAC TR31 ,
                                                                                   CHNTR 36
       2(UCCUR! 192), FAC TR 4), (OCCUR (193) ,FAC TR5), ( CCCUR (194), FACTR6),
                                                                                   CHNTB 37
       3(OCCUR(195), FAC TR 7), (OCCUR(196), CMOIN ), (CCCUR(204), WTH ),
                                                                                         30
                                                                                   CHNTB
       4(OCCURT 228), WTO TAL)
                                                                                   CHNTB 40
        EQUIVALENCE
       1(OCCUR(0844), TXCGD(1)), (OCCUP(0894),
                                                   TAB! (1))
                                                                                   CHNTR 41
       2(OCCUR(0944), TABIX(1)),(OCCUR(3994),
                                                                                   CHNTB 42
                                                                                   CHMTB 43
       2(UCCUR(2644), Th(1,11),
       4(OCCUR(2833), TXCGD1(11), (OCCUP(2883), TXCGD2(11),
                                                                                   CHNTR 44
       5(OCCUR(2933), TABI1(1)), (OCCUR(2983), TABI2(1)).
                                                                                   CHNTB 45
       6[UCCUR(2032), TABIX1(1)), (OCCUR(3083), TABI X2(1)),
                                                                                   CHNTB 46
                                                                                   CHNTR 47
       7(OCCUR(3133), TABZ1(1)), (OCCUR(3183), TABZ2(1))
                                                                                   CHNTB 48
        EQUIVAL ENCE
       1(NDCCUR(N1),JJHOLD), (NOCCUR(N4),MAXTAB), (NOCCUR(05),NOSEUP),
                                                                                   CHNTB
       2(NOCCUPI 10), MHEAT), (NOCCUR (13), MATLNO) . (NOCCUR (15) . NGECM ),
                                                                                   CHNTB 50
       2(NUCCUR(16), MXTAB1), (NOCCUR(17), MXTAB2), (NOCCUR(20), MATLN1),
                                                                                   CHNTR 51
                                                                                   CHNTR 52
       4(NOCCUR (211, MATLN2)
                                                                                   CHUTB 53
                                                                                   CHNTB
        COMMON OCCUR . NOCCUR
                                                                                   CHNTR 55
                                                                                   CHNTB
                                                                                   CHNTB 57
             SUBROUTINE CHNTRL ASSIGNS THE APPROPRIATE GEOPETRIC AND
                                                                                   CHNTR 58
           MATERIAL PROPERTIES AS INITIAL VALUES AT THE REENTRY ALTITUDE
                                                                                   CHNTR 59
```

```
AND AT ALTITUDE ZTURN, WHERE THE INTEGRATION IS RESTARTED ...
                                                                               CHNTB 60 ....
                                                            THE TABLES WITH
         AFTER DISCONTINUOUS CHANGE IN CONFIGURATION. THE TABLES WITH SUBSCRIPT I ARE FOR THE INITIAL CONDITIONS AT REENTRY. THOSE
                                                                               CHNT B 61
                                                                               CHNTB 62
         SUBSCRIPTED WITH A 2 APE CONFIGURATION PARAMETERS AT LTURN.
                                                                               CHNTS 63
                                                                               CHNTR 64
                                                                               CHUTH 65
      JJHOLD#0
                                                                               CHMTR 66
      CU TO ( 100, 200), ECHNGE
 100 ZTURNX =ZTUFN
                                                                               CHNTB 68
                                                                               CHNTB 69
           GEOMETRY DESCRIPTION AT REENTRY ALTITUDE 70
                                                                               CHNTR 70
      CO 101 J=1,50
                                                                               CHNTS 71
      TXCGC(J)=TXCGD1(J)
                                                                               CHNTR.72
      TABIUJ ) = TABII(J)
                                                                               CHNTB 73
                                                                               CHNTB 74
      IL) IXI BAT = (L)XIBAT
  101 TABZ(J)=TABZ1(J)
                                                                               CHNTS 75
      CMOIN#CMOINI
                                                                               CHNTB 76
      MAXTAB#MXTABL
                                                                               CHNTB 77
      TW/=TV1
                                                                               'CHNT9 78
      JJ=151
                                                                               CHNTB 79
      MATERO =MATER1
                                                                               CHNTR AN
                                                                               CHNTS 81
      GO TO (162,163,164), NGEOM
                                                                               CHMITR 82
                                                                               CHNTS 83
           NGEUM=1 INPUT WEIGHT, CONE HALF ANGLE, NCSF AND BASE RACIT CHITT 84
  102 W=W1
                                                                               CHNTB 85
      THETA=THETA1
                                                                               CHNTR 86
      RN#RN1
                                                                               CHNTR 97
      39#R#L
                                                                               CHNTB 88
      LAMUA1#RN1ZRB1
                                                                               CHNTR 49
      S INT F1=DSIN( THE TA 1* C. C174532 900)
                                                                               CHNTB 90
      COSTF1=DCOS(THE TA1* 0. C1745329D1)
                                                                               CHNTB 91
      LA1=RH1*(COSTH1-LAMDA1*(1.CDO-SINTH1))/SIATH1
                                                                               CHNTR 92
      co' 10 366
                                                                               CHNTB 93
                                                                               CHNTB 94
           NGEUM=2 INPUT WEIGHT, BASE RADIUS, CONE HALF ANGLE, AND
                                                                               CHNTB 95
         BLUNTNESS RATIO
                                                                               CHNTR 96
  103 W=W1
                                                                                CHNTR 97
      THETA=THETA 1
                                                                                CHNTB 98
      38=881
                                                                               CHILL B 99
      RN#R B1*LAMDA1
                                                                               CHNTR 100
      SINTH1 = DSIN(THE TA 1 * U. 6174532900)
                                                                               CHNTB IO 1
      COST +1 = DCO S(THE TA 1 * 0. C174532 9DO)
                                                                               CHNTR102
      L'Al=RB1*(COSTH1-LAMDA1*(1.GDC-SINTH1))/SIATH1"
                                                                                CHNT 8123
                                                                                CHNTB 104
C
                                                                                CHNT B 105
            NGFOM=3 INPUT WEIGHT INCSE RADIUS BASE RADIUS AXIAL LENGTH
                                                                               CHNTRI06
  104 W=W1
                                                                               CHMTRIOT
      RN=RNI
                                                                                CHNT B 308
      RB=RB1
                                                                                CHNT B 109
      TEM=LAI-PNI
                                                                                CHNT B 110
      TEST = TEM * TEM - RN 1*RN16RH1*FB1
                                                                                CHNTB111
       IF(TEST.LT.G.000100 TO 35
                                                                                CH1T9112
      THETA=180.CDO*ASINP((-(LA1-RN1)*RN1 &RB1*SCRT(TEST))/
                                                                               CHNTR 113
     1(TESTERNIARNII)/PI
                                                                                CHNTR114
      CO TO 300
                                                                                CHYFR 115
                                                                                CHNTS116
  200 ZTURNX =- 1.CD10
                                                                                CHNTB117
                                                                                CHMT B118
      LAIF=LA*12.CDC
      RRIF =RR# 12.CDC
                                                                                CHNTB119
```

410	THET 1F = THE TA+ 57.2 55780 C RN 1F = RN + 12.00 C	CHNTR120 CHNTR121
	1 AMD IF # LAM DA	CHNTR122
	W1F*WTOTAL	CHNT B 123
C	ment of the control o	CHNT B124
C	GFOMETRY DESCRIPTION AT ALTITUDE ZTURK	CHNTB125
	CO 201 J≈1,50	CHNT9126
	TXCGC(J)=TXCGD2(J)	CHNTR127
	(L)SIBAT=(L)IBAT	CHNTR128
AN OLDER I AN A. C. AND RESIDENCE I SHARE	TABLE LISK I DATE (LISK I DATE OF THE PROPERTY	CHIT B129
. 201	TADZ (J) *TADZ 2(J)	CHNTR130
1 m 1 m 2 m 2 m 1	CMO IN = CMO IM 2	CHNTB131
•		
	MAXTAS*MXTAB 2	CHNTP132
	TRO=TH2	CHNTB133
production is adding to one of the	A JUNE 176	CHNTRI34
	MATL NO =MA TL N 2	CHNT 8135
C		CHMTR136
	GO TO(202, 203, 204), NGEOM	CHNTB137
C		THAIT BIRB
č	NGEOM = 1 INPUT WEIGHT, CONE HALF ANGLE, NOSE AND BASE RACII	CHNT 8139
202	W=W2	CHNT B 140
DE TO SERVICE AND ADDRESS OF THE PARTY OF TH	THETA THE TAZ	CHNTB141
	PN#EN2	CHNT 8 142
ed at the section	"" ipplication is at a section of the transfer and the tr	***************************************
	R8#R 02	CHNTR143
	LAMDAZ#RN 2/RB2	CHNTR144
	SINT + 2 = D SIN( THI TA 2 + 0 . C1745329D9)	CHNTR145
11 Thinks I Deadles I was	COST F2 = DCO S(THE TA 2*0. C1745329D0)	CHNTR146
	LA2=RH2+(COSTH2-LAMDA2+(1.COC-SINTH2))/SINTH2	CHNTR147
	60 10 202	CHNTR148
C		CHNTR149
C	NGFOM#2 INPUT WEIGHT, BASE RADIUS, CONE HALF ANGLE, AND	CHNTR150
Č	BLUNTMESS RATIO	CHNTR151
20.3	M=W?	CHNTB152
n annanamental alex	ысы — 17 — выстанда и метри — мисистично компония и и стретем постание и стретем положения постания и стретем — по - ТНЕТА≉ТНЕТА 2	CHNTR153
	RH=RB2	CHNTP154
I be for the end of a results	RN=R B2+L AM DA 2	CHNTR 155
	•	
*   Med Let 1 - 200 - 2 - 2 - 1 - 1	SINTH2=DSIN(THETA2*0.C1745329DU)	CHNT 9 156
	COST +2=DCO SI THE TA 2+ 0. C1745329D01	CHNTB157
P     4	LAZ=RBZ+[COSTHZ-LAMDAZ*(1.CDC-SINTHZ1)/SINTHZ	CHNT815P
	GO TO 300	CHNTR159
C		CHNI 190
C	NGEOM = 3 INPUT WEIGHT NOSE RADIUS , BASE RADIUS , AXIAL LENGTH	CHNTR161
20.4	. M=MS	CHNTR162
	RN=RN 2	CHNTR 163 -
	RB=R B2	CHNTR164
man and an	TEM=LA2-RN2	CHNT B165
	TFST=TEM+TEM-RN 2+RN2&RB2+RB2	CHNT B166
a is the same of the common to the com-	1F(TEST.LT.0.CDC)GO 70 35	CHNTB167
	THETA=160.CD0+ASINR((-(LA2-RN2)+RN2 ERB2+SQRT(TEST))/	CHNTB 168
e manner & section ( ) in (actions)	11 TES TURN 2+RN 21) /PI	CHNTR169
300	CONT INUF	CHNTA 170
	A STATE OF THE PARTY OF THE PAR	CHNTB171
ř	MATLNO=1 IS TEFLON	CHR:7 B 172
male a field of the last includence	MATLNO=2 IS LTALPHA	CHNTB173
<u>.</u>	MATLNO=3 IS OTHR	CHNTB174
Land Statement	MATLNO=4 IS PHENOLIC NYLON	The same of
ŗ		CHNTR 175
	MATLNO = 5 IS CARBON PHENOLIC	CHNT8176
Ç	MATLNOSE IS AN INPUT MATERIAL	CHNTB177
C	n segon or your plants of the contract of the	CHNTS 178
	IF (MATENO. GT. 6) WRITE (6,1: 31) MATENO	CHNT B179

TELEGRAPH AND CY CAMARA NO. 2	
IF(MATLNO.GT.6)MATLNO=1 55 CO TO (31,37,32,28,35,33),MATLNO C	CHNT9180
	CHITR182
C TEFLÜN PROPERTIE'S	CHNTRIB3
31 BETAI=0.FU	CHNTB1E4
BETA2=2.162D4	CHNTR185
BETA 3±0. 5900	CHNTR186
GETA 4=3. (4504	CHNTR187
HP 6F = C + DC	CINTRIAR
F=485.00	CHNTR199
R HJ 2=136.DC	
DELRHO = (1.0)	CHNTRION
CP 2=0.260C	CHNT 1191
CP C = 0 . DO	CHNTP192
NSL = 0 . 5 3 9 0 C	CHNTRIDA
NST=C.2820(	CHNT 0 194
	CHNT 8195
NGL = 0.100	CHNT 8 196
NGI=0.00	CHMTR197
DELFC=C.DC	CHNTBIAB
EPS1L=6.400	CHNTh 100
CO TO 34	CHNTB200
	CHNTR201
C LTALPHA PROPERTIES	CHNTR202
37 BETA1=0.000	CHNTAZOR
PETA 2=0.54170L	CHNT 8 20 4
BETA 3 = c. SDC	CHNTR205
8FTA 4= 1 • 6D 4	CHNTB206
FREF=cUDU	CHNTROOT
F=207.000	CHNTB208
RH02=(6:400	CHNT 3209
DELR HO = C • C DO	CHNTR210
CP 2=0. £200	CHNT8211
CP C= C • CDO	CHNTR212
VSL = (. 5700	P PETE STREET IN
MST=C.45ENC	CHNTR213
NCL = C.CDU	CHNTR214
NGT=0.(DO	CHNTB215
CFL HC=0.000	CHNTB216
EPS1L = C. 75D0	CHNTR217
CO 10 34	CHNTD218
C	CHNTD219
C OTWR PROPERTIES	CHNT 0 2 20
32 bETA1=0.00	CHNTR221
9CTA 2= . 1 8 5 0 1 0	CHNT R222
BETA 3 = - 0.50D C	CHNT8223
	CHNT8224
BETA 4=1.16D5	CHNTR225
HPEF=0.DC	CHNTR226
F=25E5.00	CHNTR227
RHJ 2=82.D0	CHNT822B
DEL RHO = 20 . D G	CHNT 0229
CP 2=0, 220C	CHNT P 2 3 0
CP G = 0 . 42 31) 0	CHNTB231
NSL = 0.60700	CHNTB232
M21 0 * 20 20 0	CHNTB233
NGL = 2 . 847D0	CHNT 9 234
NGT=0.27200	CHNTB235
DELHC =950.00	CHNTB236
EPSIL=C. 500	CHNTB237
CO TO 34	CHUT R 238
Commence of the commence of th	CHNT 8239
•	PARAL DE SAM

C	P'HENDLIC NYLON PROPERTIES.	
	EETA 2=0.CDC	CHNT8241
i errentinininininininginas; sa sepag ga	PETA 3=0.000	CHNTR242
·	@ETA4#0.0D0	CHNT R 243
	HREF=U.CDC	CHNT 8244
	F=4UC.CD	CHNT 8245
met l'ele leter a	RHO 2= 30 + 5%	CHNT B246
		CHNT B 247
BITT THE SECTION OF THE PARTY.	CEL RHO = 45. CD C	CHNTB248
	CP 2=0.36D0	CHNTR249
	CPG=0.0D0	CHNTR250
	NSL=U.5200	CHNTR251
M (4 ) 1 (10)	NST=0.2000	CHNT 0252
	NGL = 0.5200	CHNT 9253
Mr. B	NGT = 0, 2CD0	CHNT B 254
	CELHC=C.ODO	CHNT 255
	EPSIL=0.80DQ	•
	GO TO 34	CHNT B 256
C		CHNTB257
C .	CARBUN PHENDLIC PROPERTIES	CHNTR258
39	PETA 1=0.0DG	CHNTB259
man massins.	PETAZ= 9.10 F	CHNT R 26C
	BETA 3*C . 29DO	CHNT R261
MIR STIPPING IN	BETA 4= 1.6105	CHNTR262
	FREF=0.600	CHNT P263
1	Windowsky and the control of the con	CHNTB264
	F=11050.CDC	CHNTR265
-	RHO 2=85.70 C	CHNTB266
	CELR FO = C . GDO	CHNT 8267
	CP 2=C . 348D C	CHNT B 26B
	CP G= C.6D0	CHNTB269
	NSL = C.CDO	CHNTR270
	NST=C.QNO	CHNT9271
-	NGL = C.CDU	CHNT B 272
	NGT # 0. QDO	the second secon
	CELHC=0.0DQ	CHNTR273
	EPSIL =U. 8DQ	CHNT B 274
	CO TO 34	CHNT8275
C	The state of the s	CHNT9276
C	INPUT MATERIAL PROPERTIES	CHNT 8 277
33	HETA1=DCCURIJJE1 )	CHNT9778
	BETAZ=DCCUR(JJC2)	CHNTB 279
<del>                                     </del>	BETA 3=DCCUR(JJ&3)	CHNTB280
160	BETA4=OCCUR(JJ&4)	CHNT B 28 1
tradent to early dependent		CHNT 8282
	FREF=OCCUR(JJ&5)	CHNT 8283
	F=DCCUR(JJC6)	CHIT B284
101 4 14	RHM2=OCCUR (JJG7)	CHNTR285
	DELRH)=UCCUR (JJ&E)	CHNTD286
	CP 2 = OCCUR(J) E9)	CHNT B287
14 I service de de	CPG=OCCUR(JJ&10)	
	### #OCCOX ( 22 % T I )	CHNT 8289
	NST=DCCUR(JJE12)	
	NGL =OCCUR ( JJE 13)	CHNTR291
1,1	NGT*DCCUR!JJE141	At a second
e region assets in paging	CEL HC*OCCUR(JJELS)	11000
	EPS II #OCCURTAGE 163:	CHNTR293
AF	CONTINUE	CHNTB294
	The section of the se	CHNTB295
<u> </u>	TESTING COME UNITED THAT THE TRANSPORT	CHNT B296
•	TESTING CONE HALF ANGLE WITH RANGE OF APPLICA	BILITY CHNTB297
	1F(THETA.LT.40.0DC)G0 TO 57 1F(THETA.LT.40.0DC)G0 TO 5	CHNT/1/298

57 WRITECE, 1058 THE TA	CHNTROON
1058 FOLMATI THO TOX. 19HINPLT FREDR. THETA #F8.3 .40H IS CUTSIDE THE NANC	ECHITA 30 I
I UI 4 III 40 DECKETSI	CHNT B 30.2
JJHULDE 1	CHNTP303
PETURN	CHNTR204
5 CONT INUE	CHNTR305
	CHNT P306
C DEFINING TRIGUNGMETRIC QUANTITIES	CHNT 8307
THETAD=THETA	CHAIT BROB
THETA= 0.0174532 SD C* THE TA	CHNTR309
SINT = SIN(THETA)	CHNTBBIC
CUST = COS(THETA)	CHNTP311
TANT = SINT/COST	CHNTB312
RESINT=1.00/SINT	CHNTR313
S()C()ST=C()ST*COST	CH1, FR314
C Destricted to the control of the c	CHNTR315
C DEFINING INITIAL VALUES OF DVALUE ASSOCIATED WITH GECHETRY	CHNTABLE
CYALUE(5)*K	CHNTR317
CVALUE(6)=RN	CHUTBBIR
CVALUE(7)=PR	" CHN18310 ""
M() = M	CHNTB320
MIMEN	CHNTR321
CVALUE(16) =WTH	CHNTBB22
Company of the state of the sta	CHNTR323
DEFINING INITIAL VALUES FOR WALL TEMPERATURE	CHNTB324
TWSTAG=TWO	CHNTB325
TW(1,1)=TWC	CHNTR326
TWI 4, 1) #TWC	CHVT B327
C() 36 J=1, 8	CHNTB328
TWI 2+J1=TWC	CHV1 4350
36 TW(3,J)=TW0	CHRTR330
	CHNTB331
C FOLLOWING FACTORS ARE USED IN EVIL	CHNT 8.332
FACTR 2= DLOG( 1.11C 5D7)	CHNT B333
FACTR3=12.76570 GG 2.55840 C	CHNTB334
FACTR4=RHO 2*CP26CPG*DELRHO	CHNTB335
FACTR 5= DELRHO+DFLHC	CHNTR336
FACTR6=RHO 2*NSL CDFLRHO*NGL	CHNT P337
FACTR7=RIO 2*NST&DELRHO*NGT	CHNTB338
C TESTS ON VALUES INPUT FOR COTTIONS	CHNTH339
IF (MATCHO.LT.1) WRITE (6,1031) MATCHO	CHNTB340
1FINDSEOP.GT.1)WRITE(6,11031MATENO	CHNTR341
This filmati has tay as determined the termination for the first film and the first film and the first film and the film a	CHNT B342
1103 FURMATI THO 16X, 24H***** MARNING***** NCSEDP#13,43H IS NOT ALLOWED, 10SEOP IS TAKEN TO BE = 0.)	
	CHNTR344
IF(MFFAT.GT.1)WRITF(6,11(4) MMFAT	CHNT R345
1104 FORMAT(1HD 10X+23H************************************	ECHNTB346
1031 FORMAT ( 140 10X . 25H**** BAPNING**** PATLNO=13 . 24H IS THE SAME AS	CHNTR347
TATENDE 1	Lance Committee of the
RETURN	CHNT B349
35 JJH)LDa+1	CHNTB350
WRITE(6, 10:25)LCHNGE	CHNTB351
	CHNTR352
RETURN	CHNTB353
THE PROPERTY OF THE PROPERTY O	CHNTB354
	WHILD 177

CCLASSC INPLICIT REAL#8 (A=H+O=Z)	CLASS	i .
SUBROUTINE CLASSC(F321)		60. <b>4</b>
SUBMOVITME GENOCURATED THE SERVICE OF THE SERVICE O	CLASS	
an an analysis and a second of the second of		K
COMMONZENDZITERM  DIMENSION DCGUR(4000)+NOCGUR(30)+X(4000)+A(514)	CLASS	6.
EQUIVALENCE(OCCUR(1),X(1)),(OCCUR(301),A(1)),(NOCCUR(3),IOP)	CLASS	7
EDUTALENCE- (OCCUR(4000)-LP)	CLASS.	н
	CLASS	9
TO THE COLUMN TO THE COLUMN TWO IS A SECOND COMMON COMMON COLUMN TO THE COLUMN TWO IS A COLUMN TWO IS		10
G SUBROUTINE CLASSE CONTAINS CLASSIC FUNCTIONS WHICH ARE	CLASS	1.1
C DESIGNED TO PROVIDE DIFFICULT TESTS OF HOW WELL A MINIMIZATION	CLASS	14
C ROUTINE WORKS.	CLASS	
Control Matter Control State Control C		
C	CLASS	15
1F( IOP . EQ . 3) GO TU 300	CLASS	16
IF(IOP.EQ.5) GO TO 501	CLASS	17
IF(10P-EQ-5) GO TO 501	CLASS	18
F= 100.000+(X(2)-X(1)++2)++2 & (1.000 - X(1))++2 &A(1) X(100) =F	CLASS	19
X(10U) #F	CLASS	20
IF( IABS(10P).EQ. 1) GO TO 999 C 211 8= A(11) & (X(1)-A(7) )*(A(10) &(X(1)-A(7))*(A(9) &(X(1)-A(7))*	CLASS	% I
G	CLASS	22
14(8)))	CLASS	
C= A(16) & (X(1)-A(12))*(A(15) &(X(1)-A(12))*(A(14)&(X(1)-A(12))*	CLASS	26
ATTACAMENTAL CONTRACTOR OF A CONTRACTOR OF THE C		
	CLASS	
X(102)* A(3)*(X(2)*-C)	CLASS	4. H
CI TO BOOK	CIACC	7. 13
Cram by my to the control of the second common or convenience made a factor of the control of th	CLASS	30
300 FA =0.0D0	CLASS	32
FC =0.0DO	CLASS	
FC =0.0D0 FD =0.0D0 FA = X(1)**2 4X(2)**262.D0*X(3)**26X(4)**2 -5.0D0*X(1)-5.0D0*Y(2)	CLASS	34
	-CLASS	35
121.000*x(3)& 7.000*x(4)& A(17)	CLASS	30
X12001 =FA	CLASS	57
301 FAZ= 0.0006 X(4)-X(3) 6X(2)-X(1)-X(4) ++2-X(3)++2-X(2)++2-X(1)++2		
X{201} =FA2 302 FA3=10.0D06-X{4}6X{1}-2.0D0+X{4}**2-X{3}**2-2.0D0+X{2}**2	CLASS	24
1-X131+2	CLASS	41
303 FA4= 5.000EX(4)EX(2)-2.0D0+X(1) -2.0D0+X(1)++2-X(2)++2-X(3)++2	CLASS	- <b>4</b> &
303 FAT= 5.0006A1416A(2)-2.0004A(11 -2.0004A(1/++2-A(2)++2-A(3)++2	CLASS	43
GO TO 999	CLASS	4.6
The second of th	CLASS	
401 F= 4.000*X(1) & X(2) GA(25)*(1.000/X(1) & 1.000/X(2) ) & A(26)	CLASS	47
4 13001 *F days a restaurant of the state of	CLASS	4.0
GO TO 999	CLASS	44
		50
501 F-A(1)*X(1)**2 GA(2)*X(1)*X(2) G A(3)*X(2)**2	CLASS	51
16A(+)+X(1) 4 A(5)+X(2) 6A(6)		52
* X(400) = F	CLASS	53
GO. TO 999 Properties a specific and the second design of the second sec	CLASS	54
	CLASS	
999-6321-0-0	CLASS	50
LP = 1	CLASS	57
THE PERSON FROM THE CONTROL OF THE C	LLASS	50

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CCDMP 62
                                                                         COMP6
                                                                         CUMPS ...
 SUBROUTINE COMP62(H.RHO.ASOUND.T.P)
                                                                         CUMPS
    -- DIMENSION---T8(26)-H8(26),BM(26).R(26).P8(26),TATM(26)
                                                                         CUMPO.
                                                                         COMPO
                                                                         CUMP6
           SUBROUTEME COMP62 COMPUTES THE NON-DIMENSIONAL DENSITY AND
        PRESSURE, TEMPERATURE IN DEGREES HANKINE, AND SPEED OF SOUND
IN FEET-PER SECUND OF THE 1962 STANDARD ATMOSPHERE. FRUM
                                                                         CUMP5
C.
                                                                         CUMP! ... 8
C
         Z=0.0 FEET TO Z=300000, FEET THE SUBROUTINE IS EXACT. FROM
                                                                         CUMPO
         Z=300000. FEET-TO 2,275,000. FEET. CGMPARES TO LESS THAN 1/2
                                                                         COMPo 10
         OF 1 PER CENT. ABOVE Z=2,275,000. FEET CUNSTANT VALUES ARE
                                                                         CUMPS 11
C
                                                                         CUMPA 12
 C.
                                                                         CUMPS 13
                                                                         COMPS. 14
    ___ DATA 18/ ----
                  288.1500, 216.6500, 216.6500, 228.6500,
                                                              270.6500, CUMP6 15
     1 320.6500.
     X 270.6500.
                                                                         CUMPo 16
                  180.6500, 180.6500, 210.6500, 235.6500,
                                                               260.6500, COMP6 17
     2 252.6500.
     X 360.6500...
                                                                         CUMPA 18.
                                                                1550.65CUMP6 19
                  960.6500, 1110.6500, 1210.6500, 1350.6500,
     3 560.6500.
                                                                         CUMP#.. 20
     ADO.
     4 1830.6500, 2160.6500, 2290.6500, 2420.6500,
                                                       2590.6500,
                                                                    2700.COMP6 21
                                                                         CUMPS 22
.... X65D0/ -
                                                                         COMPS 23
     DATA HB/
                                                                         CUMPo 24
     1 -5000.000, 0.000, 11000.000, 20000.000, 32000.000,
                                                                47000.0 DOCUMP6 25
    - X. 52000.000.
                                                                         CUMPo 26
     2 61000.000, 79000.000, 88743.000, 98451.000,
                                                      103294.000.
                                                                    10Bicumpo 27
                                                                         COMPS 28
     X29.000.
     3 117776.000, 127394.000, 146541.000, 156071.000,
                                                                         YS AGACS
                                                           165571.000.
                                                                         CJMPb 30
     X1 H4485. ODO.
     4 221967.000, 286476.000, 376312.00C, 420240.000,
                                                                         CUMP6 31
   - X548250.0DO.
                                                                         CJ4P6 32
                                                                         COMPO 33
     5 630530.000/
                                                                         CUMPS 34
                                                                         CUMPS 35
      DATA BM/
    -1 -0.0065D0;----0.0065D0;---0.000;---0.001D0;---0.0028D0;--0.0D0;
                                                                     -3.0CUMPo 36
                                                                         C0426 37
    -2 -0.004000, -- 0.000, -- 0.003390200, -- 0.00516209000, -- 0.00517063100, CUMPS. 36
     3 0.01036591D0, 0.02079434U0, 0.020891D0, 0.015739D0, 0.0105263CUMP6 39
                                                                         CUMPS 40
     4 0.0074019300, 0.0053359000, 0.0043404bD0, 0.00367336D0, 0.002COMP6 41
                                                                         CUMP6 42
   .... x95938800.
     5 0.0030032800, 0.0020069900, 0.0013365700,
                                                    0.000/
                                                                         CUMPo 43
                                                                         CJ4P6 44
      DATA R/
                                                                         CUMP6 45
     -1 0.193049997D&L,-0.122500263D&1. 0.363918856D-0, 0.880350657D-1,
                                                                         CUMPS. 46
     2 0.132250458D-1, 0.142753743D-2. 0.759434283D-3. 0.251091339D-3.
                                                                         CUMPS 47
     -3 0.200114310D-4, -0.3170151713-5, -0.497409776J-6, -0.211574012D-6,
                                                                         COMPS 48
     4 0.9829869270-7, 0.2436293590-7, 0.7591592450-8, 0.1836558950-3,
                                                                         CUMPO 49
     5...0.1159384550x8,...0.804025792Ur9,...0.434910767D-9; .0.156481698D-9; .
                                                                         C34Pb.50.
     6 .358881794D-10, .65095C819D-11, .312789872D-11, .157970712D-11,
                                                                         CUMP6 51
     COMPo 52
C.
                                                                         CUMPO 53
    ... DATA PB/
                                                                         CUMP6 54
     1 0.120676249064, 0.472681269063, 0.105578616063, 0.255403660062,
                                                                         CUMPS 55
    -2 0.404931098041, 0.517378375040. 0.2752396320-0, 0.8495007680-1.
                                                                         CUMPo So
     3 0-484093063D-2, 0-766885906D-3, 0-140309744D-3, 0-667954773D-4,
                                                                         CUMPO 57
    · 4 0.3430974860-4, 0.1176596453-4, 0.569949880D-5, 0.236255541D-5,
                                                                         CUMPO 56
     5 0.1724303810-5, 0.1303459700-5, 0.7865965740-6, 0.3247275090-6,
                                                                         CUMP6 59
```

```
7 0.1612728610-8, 0.5571266340-9/
                                                                        CUMPS 61
                                                                        COMP6 62
       DATA THIM!
                                                                        C34P6 63
      1 28.9644D0,-28.9644D0,-28.9644D0,-28.9644D0,-28.9644D0,-28.9644D0,-28.96COMP6 64-
      X4400.
                                                                        COMPS 65
    ---2 28.9644D0;--28.9644D0;--28.9644D0;--28.9644D0;--28.88D0; 28.75D0CUMP6 66
                                                                        C04P6 67
         28.5600,
      -3 28.0700+--27.5800+--26.9200+--26.66C0+--26.40D0+--25.85D0+-
                                                                   _24.70CUMP6 66
                                                                        CUMP6 69
      XDO. 22.66DO.
      4 19-9400, 18-8200, 17-9400, 16-8400, 16-1700/
                                                                        CUMP6 70.
 C
                                                                        CUMPS 71
_____DATA AG /9-8066500/...AM0-/28-9644D0/. ARR /8-31432D83/...
                                                                        COMP6 72
                           AR /6356766.000/, CON1 /0.304800/, CON2 /1.800CJMP6 73
      2
      .X/ ..
                                                                       ... CUMP6 .. 74
      3 CON3 /0.0021156D0/, CON4 /263.83052D0/
                                                                         CUMPS 75
                                                                        CUMP6 76
ыĞ.
                                                                         CUMP6 77
 C
                                                                        CUMPS 78.
CUMP5 79
 C
                                                                       .. CUMP5 .. 60
             ....134865142D=12
       ASUUND=3413.42933D0
                                                                        COMP6 81
         T = =2713.9566100 -
                                                                        C3MP6 82
         P
                                                                        CUMP6 83
             =.126068033D-11
                                                                       * COMP6 84
--- GO TO 100 -
 C
                                                                        CUMP6 85
             ...H. ... CON1.
                                                                        CUMP6 ... 86
                         - AR + ZZ / (AR & ZZ)
                                                                        COMPS 87
                   AH
                                                                      CUMP6 88
            - DO 7 I = 1,26 ...
                                                                       · CUMPS 89
             IF(AH - HB([)) 7.8,9
           .... IF(AH ... HS(IG1)) 8.7.7.
                                                                        COMP6 90
                                                                         COMPS 91
                   K
                          . [
             -GO-TO-10
                                                                        CUMP6 .. 92
 C
                                                                        COMP6 93
                                                                        COMPS 94
          CONTINUE ...
                                                                        COMPS 95
 C
                                                                       ..... COMP6 96
 10.WS4.....(AH.>HB(KI)
                                                                         COMPo 97
                          = TB(K) &(8M(K) * (WS4))
                   TM
                                                                         .CO425 .98
                                                                         COMP6 99
       IF(KK-EQ. 26)KK-25
       WTM#TWTMLKKJE(AH-HBCKKJ)#(TWTMCKKEL)#TWTMCKKJ)/(HBCKKEL)#HBCKKJ). COMP6100
             " TH + CON2+(HTH / AMO)
                                                                         COMP6101
        1
                                                                         COMP6102
    12
             IF(BM(K) - 0.00) 15,16,15
                                                                         COMP6103
                                                                         COMP6104.
   15
        W55
             - (TB(K) / TM )
                                                                         COMP6105
            - ( AG + ANO / (ARR + BH(K)))
       MS6 ...
                                                                         COMPSIOS.
             *(R(K) + WS5 **(1.00 & WS61)/ R(2)
                                                                         CDMP6107
       RHU
             ...(AB(K)+.455..++(WS6)...)..+ CON3....
                                                                         CUMP6108
                                                                         CUMPo109
             GO TO 17
                                                                         CUMP6110.
                         AU * AMO * WS4)/( ARR * TB(K)))
                                                                         CUMPETIT
   16
       HS7
            = EXP ( - (
       AHO.
             ..... R.(K) .... WS7/R(2)
                                                                         CUMP6112
              * PB(K)* WS7* CON3
                                                                         COMPELLS
         p
                                                                         COMP6114
   17 CONTINUE
                                                                         COMPOLL 5
        ASOUND ..... CON4
                            * SORT [ T / HTM ]
                                                                       ....CUMP5116.
             RETURN
                                                                         CUMP6117
    100
                                                                         COMPOLIS
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The state of the s	
CCAVDON	DAVDO 1
	DAVDU 2.
SUBROUTINE DAVDON	DAVD3 3
COMMON/IDPT/IPRUC+IN+NCONS+IPNT+IEX+LIMIT+IRAND	L CUVAC
COMMON/FOPT/ERR.PRAND, FACI, DELTAL	DAYDU 5
COMMON /END/-ITERM	DAVUO -6
COMMON/BLKU/ H(40,40),X(40),G(40),S(40),XP(40),GP(40),T(40),GB(4	OUVACIO 7
2DELTA,FAC,C(40,10)	DAVUU 9
COMMON/SENSE/ISEN1.ISEN2	OL GUVAG
COMMON/BLKI/M.N.L.LS.MI.MS.NS.IT.K.NC	LA COVAU
process of the control of the contro	DAVDD 12
	UAVUO 13
SUBROUTINE DAVDON IS THE CONTROLLING SUBROUTINE FOR THE	DAVIIO 14.
CALCULATIONS OF THE DAVIDON VARIABLE METRIC METHOD OF MINIMI-	
ZATION, WHICH DETERMINES NUMERICALLY THE LOCAL MINIMA OF	DAVDO 16
DIFFERENTIABLE FUNCTIONS OF SEVERAL VARIABLES. IN THE PROCES	S DAVDO 17
OF LOCATING EACH MINIMUM. A MATRIX H WHICH CHARACTERIZES THE	BI CUVAC
BEHAVIOR OF THE FUNCTION AJOUT THE MINIMUM IS DETERMINED.	DAVOU 19
ANNONSTRUCTURE AND A TOTAL TOTAL PERMANENT MARKET CONTROL TO AND	DAVUU 20
	DAVUU 21
FLIM =0.000	DAVUU 22
N = TN	DAVIDO 34
THE THE TRANS	JAVUJ 24
F10 F103	15 8 4 4 501 14 6
PAC = PACI	DAVUD 26
NC=0	DAVDO 27
TILIME LIMITA DIMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTALISMENTAL	DAVUD 28
E = ERR	DAV DO 29
VARIABLE METRIC MINIMIZATION	DAVUD 30
101 46-0	DAVUD 31
	DAVOD 34
106 DO 1064 I=1,N	DAVDO 33
	DAVOO 34
105 H(I.J) =0.000 	DAVID 35
1064 CONTINUE	DAVDU 37
··· 60 TO 109	1144117 34
A COLUMN TO A CONTROL OF THE CONTROL OF THE CONTROL OF THE COLUMN THE CONTROL OF	DAVUD 39
1066-DO-1068-I=1-N	DAVIDO ST
1067 DO 1068 J=I+N	DAVID 41
1968 - H(J, I) = H(I, J)	11AV10 42
#500 . CHANTE MITTER A La managam managam Managam managam mana	DAVOD 43
-109- WRITE(6+5)	DAVOJ 44
WRITE(6,1)	DAVDU 45
111 WRITE(6,6) No K. E. P. DELTA	
112 WRITE(6,7) (X(1), I=1, N)	DAVUD 47
	DATES TO
114 DO 115 I=1.N	PA COVAC
114 UU 115 1=1+N 	TAUNT EA
116 M1=1	3AVD3.50. 51 DAVDG
1165-F=0.0 ··· ··· · · · · · · · · · · · · ·	DAYOU DI
	DAVDO 53
The two controls and interest and the second control of the contro	
117 CALL FCN(N,G,F,X,M1)	DAVUD 55
	DAVOJ 56
	1 140
	JAVOU 57
1175 IF(F-FLIM) 1393,1393,118	1 140

	COVAC		
119 WRITE (6,14)1T,MS,F	COVAC	27	
119 WRITE (6.14) IT. MS.F 1195 WRITE (6.7) (XLI). I = 1.N)	DAY DO 1	52 -	
A MAR A C. A MAR A A A A A A A A A A A A A A A A A	DAVIO	2.5	
120 WRITE (0,4)	UAVDO 1	04	
1202 DO 1209 J1=1+NC -1203 CALL MATMP (N+N+H+G(1+J1)+T)-	DAVOO	50	rende
1204 CALL MATMP (1.N.T.C(1.J1).TO)	DAVDO	ь7	
1204 CALL MATMP (1.N.T.C(1.J1).TO) 1205-1F-(TO-E)1209.1209.1206	DAVDU	68	nacion specialis
1206 DO 1208 I=1,N	DAVDU	64	
1207 00 1208 Jalan	DAVUU	70	
		7 L	
1209 CUNTINUE	DCVAU	72	
1207 00111102	DOVAC	73	
C 121 CALL READY	DAVDO .	74	
THE PERSON AND AS AN TO SAN	DAVUU	12	
IF(ITERMONE-U) OU TO 149	CCVAU	76	
	MAUIL	77	
122 L=L 123 GO TO (139,159,137,126),L	DUVAG	78	
	BAVUL	, ,	
126 60 70 1201	DOVAL	80	
	DOWAL	62	paper to be to
IF(ITERM.NE.O) GO TO 149	DAVDO	83	
IFTITERNANCED GO TO ATT	COVAC	84	
A STATE OF THE PROPERTY OF THE	DAVDO	85	
127 L=L 128 GO TO (129,135,137).L	DAVDO	86	
	PAVIL	н,	
C 129. CALL. FIRE	DAVUU	88.	I F HOP
IF(ITERM.NE.O) GO TO 149	DAVUD	84	
	DAVDO	90	
130 L=L 	DAVUO	92.	
131-15U -1 U	DAVDO	93	
132 L=1	DAVUD	94.	m - e 144
133 CALL ORESS	CUVAG	95	
135 CALL UNESS	DAYDU	96	me deduction
1F(1F0.LE.0.000)+OR.(LT.GT.1TLIN) ) GO TO 142	DAVIDO .	98.	
1335 L=L 134 GD TO (124, 162) -L	DAVUOL	.00	
	DAVDUL	01	
135 L42	LLUVAG	02	
· · · · · · · · · · · · · · · · · · ·	DAVDUL	03	
138 20 10 133	COUVAG	04.	
	JAVUDI		
157 L=4	DAVODA	00	4 1- 1-10
	DAVDOI	07	
.39 IF(ISEN1) 1395.1395.1393 1393 UKITE (6.7)(X(1),I=1.N)	CUVAG	108	
1345 CALL STUFF	DAVUDI	09	
	DAVDO		
141 CO TO (1148.1451.)			
141 GD TO (1145,142).L 142 WHITE (6,10)	CUVAU	12	nt (r. 40,100 d
ACATT AS THE INE ON TO 1A3	DAVUUI	113	
United A Grat IT	JAYUJ	114	1111
1F(IT.LE.ITLIN) GO TO 143  MRITE(0.00) IT.  900 FURNATILH /1X0X, PROGRAM HAS NOT CONVERGED AFTER 13. 1TERATIONS 1	DAVUU	445	
AND LABORATION LONG AND	LUVAL	116	31 SHIP # 3
143 HRITE (6.11)	DAVUO	117	
143 WKITE (4.11)	CUVAU	118	
145 WRITE (6.9) (H([,J),J=1,N)	DAYUU	114	

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DAV D3120
 147 WRITE (6,7)(X(I),I=1,N)
                                                                  LYTCOAVO
-- 148 WRITE-(6,12)(G(1),[#1,N)-----
                                                                  -SSILCOVAU -
C
                                                                  ELICUVAU
C
                                                                  +SECOVAU
 149 M1 = 3
                                                                  DAVDD125
 100 CALL FGN(N+G+F+X+M1)
                                                                  DAVUDIZA
                                                                  VAVUDILE?
                                                               DAV UULZB ...
  151 IF(ISEN1) 152,152, 157
                                                                  PATCUVAU
  152 CONTINUE
                                                                  DAVUDISO
  156 GO TO 157
                                                                  DAVUU131
   1 FURNAT (72H-IDENTIFICATION TITLE
                                                                  0AVD0132
                                                                  EEECUVAU
   2 FURMAT (316.Fo.0)
                                                                AELEUVAD .....
   3 FORMAT (6012.5)
                                                                  UAVUJ135
   4 FURMAT (20H0-----
                                                                  DAVUULS6
   5 FIRMAT (29HIVARIABLE METRIC MINIMIZATION)
                                                                  TELLUVAC
   6 FORMAT (3HON=12,4H - K=12,4H - E=1PE14.5,4H - P=E14.5,8H - DELTA=E14.5UAVUU138 -
    1)
                                                                  DAVOULS
  ...7 FORMAT (3HOX=1P8E14.5/(3HO _8E14.5))
                                                                  DAVUUL40 .
   8 FORMAT (2HOH)
                                                                  141CUVAC
  9 FORMAT (1HO1P8E14.5/(1HO8E14.5))
10 FURMAT (13HOF[NAL VALUES)
                                                                  UAVUU142
                                                                  DAVUDIG
   11 FORMAT (23HOERRUR MATRIX)
                                                                  441CUVAU
   12 FURMAT (3HOG=1P8E14.5/(3HO 8E14.5))
                                                                  UAVUUL45
  13 FURMAT (3HOF=1PE14.5, 5H GS=E14.5) ...
                                                                  DAVUU146
  14 FORMAT (4HOLT 14,7H STEP 14,4H F=1PE14.5)
  157 CUNTINUE
                                                                  JAYDU146
  158 CONTINUE
                                                                  CALCOVAU
  162 RETÚAN
                                                                  DAVD3150
     END
                                                                  UAVUJISI
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Meninti esse agrecia ( 1804 ) - 4 ( ) 1 ( ) 1 ( ) 1 ( ) 4 ( ) 4 ( ) 4 ( ) 4 ( ) 5 ( ) 6 ( ) 6 ( ) 6 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 ( ) 7 (

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CUEREQ
                                                                                  DERFO
                                                                                  DERFO
       SURROUTINE DEREGIDVAL. ZUSE DERIVILLE
                                                                                  DEREG
                                                                                  DERFO
                                                                                  DEREG
       REAL *8 MOUT. LAMDA . MINF
                                                                                  DEPFO
                                                                                  DERFO
       CIMENSION ALPTAB( 75) . CD TAB ( 75) . WITAB (75) . WCDTAB (75) . HT AB( 75)
       CIMENSION OCCUR (4CCO), NOCCUR (30), NO OT (4,8)
                                                                                  DEREQ
                                                                                  DERFO
       CIMENSION DVAL(16), DERIV(16)
                                                                                  DER FO
       EQUIVAL ENCE
                                                                                  DERFO 11
                                                                                  DER FO 12
      100CURCOOLLARFE
                           1. (OCCURICO2), ALPHA 1. (CCCURIO03), ALPHIMI,
                                                                                  DEREQ
                           1. (OCC LR (026) GAME
                                                 1. CCCURTO321.LAMCA 1.
                                                                                         13
      21UCCUR(U16),CD
                           1. (QCC LR (C43) .P
                                                  ) . ( CCCUR (044) . PHI ___ ) .
                                                                                  DERFO_14
      2LOCCURIC351.MINE
                                                                                  DERFO 15
      4(UCCUR1045).PSI
                           1,1000 UR ( 05() +2
                                                                                  DERFQ 16
                           1, LOCC LR (053) ,RB
                                                  1. (CCCUR(059).RNLCT ),
      SINCCURIOS21.RN
                                                                                  DERFO 17
                                                  1,(CCCUR(O71),THEALP),
      6(CCCUR(G67), RADUT ), (CCCUR(G65), SMR
                                                                                  TERFO IR
                                                  1. (CCCUR(ORO).TIMER ).
      TEOCCURE 073), THSTAG), EDCCURE (474), TWO
                                                                                  DEREO
                                                  1,(CCCURIDA6),WDCT
                                                                                         19
      MIOCCURIO821.V
                           1, (OCC UR ( C84) , W
                                                                                  DERFO
      91 UCCUR1 9871. XR
                            1. LOCCUPICOCI, XHAR
                                                  1. ( CCCUR (09 1) .Z
                                                                                  DERFO
       EQUIVAL FNCF
                                                  1. ( CCCUR(200), PSIALPI
                                                                                  DERFO
      ICOCCUR(18F). AWREF 1. (OCCUR(199) .YR
                           1. ( DCC LR ( 237) . XUP
                                                                                  DERFO
      20 DCCUR ( 204) WTH
      3(OCCUR(270E), MDOT(1,1)), (OCCUR (3233) +HTAB(1)),
                                                                                  DERFQ. 24
                                                                                  DERFO
                                                                                         25
      460CCUR(3308).WHTAB(1)),40CCUP(3383),CDTAB(1)),
      STUCCUR(3458) - NCDTAB(11) - (OCCUR(3646) - ALPTAB(1))
                                                                                  DER EO
                                                                                  DERFO
                                                                                         27
       EQUIVALENCE
                                                                                  DERFO 28
       ILNOCCUR! 031
                      MOPTH (NOCCUPINS) NOSEOP) (INCCURITY) . MHEATH
      ZINUCCURTIBI, MAXCD ), (NOCCUR(19), MAXED), (NOCCUR(30), INALPH)
                                                                                  DEREQ
                                                                                  DERFO
                                                                                  CERFO
                                                                                         31
        COMMON OCCUR NOCCUR
                                                                                   DER EO
                                                                                         32
                                                                                   DEREO
                                                                                         33
                                                                                  DEREO 34
             SUBROUTINE DEREQ CALLS IN SUBROUTINES WHICH CALCULATE THE
                                                                                  CERFO
                                                                                         35
                                                                                   DERFQ
           DERIVATIVES INTEGRATED BY SUBROUTINE ADMARK.
                                                                                   DERFO
                                                                                         37
                                                                                   DERFO
                                                                                         38
             INTERNAL PROGRAM VARIABLES ARE SET EQUAL TO CORRESPONDING
                                                                                   DEPEQ
                                                                                         39
                                                                                   DERFO 40
           INTEGRATED VALUES FROM INTEGRATION SURROUTINE ADMARK.
                                                                                   DERFO
       V-DVAL (1)
        GAMF=DVAL ( 2)
                                                                                   DERFO
                                                                                   DER FO
        TIME *DVAL ( ?)
                                                                                   CER FO
        Z=ZUSE
                                                                                   DER FO
        XR = DVAL ( 4 )
                                                                                   DER EO
        W=CVAL [5]
                                                                                   DERFO
        PN+UVAL ( 6)
                                                                                   DEREG
        RH-DVAL [7]
                                                                                   DEREC
        PS I*DVAL ( 8 )
                                                                                   DERFO
        THEALP DVALL9
        PHI-DVAL (10)
                                                                                   DERFO
                                                                                   DERFO
        Q=CVAL(11)
                                                                                   DEPFO
        SMR#DVAL [12]
                                                                                   DERFO
        9 - DVAL (13)
                                                                                   DERFO
        VR #OVAL [ 14)
                                                                                   DEREO
        PSIALP *DVALIL
                                                                                   DERFO
        WTH+ CVAL [ 16]
                                                                                         57
                                                                                   DEREQ 58
        TIMER . TIME
        1947 "F1" 00100 10 5
                                                                                   DERFO
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C SUBROUTINE PRELIM DOES PRELIMINARY CALCULATIONS OF GEOMETRIC.	DEREG	60	96 - In I promise
C SIDU STEID. AND TROUGHT OF DAGAGETERS OF GEOMETRICS	and the same of		
C FLOW FIFLD, AND THRUSTING PARAMETERS.	DEREO	11 1998	Mera <del>rina anapasa</del> a
	DEREC		
CALL PRELIMILLY	DECEO	eri i	199 9491
IFILL AFO. 6 IRETURN	DERFO	65	
	DERED	64	
C PROGRAM WILL NOT RUN WHEN THE FREE STREAM MACH NUMBER IS	DEREG	67	
C LESS THAN 5.	DEREG	68	,
IFININE .GE .5. COCIGO TO 20	DEREC	69	
• WRITE(6, 1001)	DERED	70	
1001 FORMATI THO TCX, 19HMINE IS LESS THAN 5)	DEREG	71	- Haris - Miramini
LL=6	DEREG	72	
RETURN	DERFO	73	- 100000 1 000-111
C	DEPFO	74	
C PROGRAM WILL NOT RUN WHEN THE BLUNTNESS RATIC IS GREATER	DERFO		
C THAN O.6.	DERED		
20 IFILAMDA.LE.C.6DCIGO TO 22	DERFO		-
	'UER FO		
The state of the s	DERFO		e johne de manager mana
U.=6	DERFO		
SETURN	DERFO		
22 CONTINUE	DERFO		
THE ME AND AND THE CONTROL OF THE PARTY OF T	DERFO	* Hilliam	****
C NO HEATING OR MASS LOSS CALCULATIONS IN RAREFIED FLOW.	DEREO		
	DER EQ	1988690	
C CONTINUUM FLOW AND IN THE FAIRING REGINE BETWEEN STRING	DEREQ		
The state of the s	DERFO	14 10000	-
1F(X BAR .LT .XUP)GO TO 2	DEREO		(-1
the community of the contract	DERFO		M(Herr - 1999-199
CERIMON DC	DERFO		
CERIV(6)=U.DO	DERFO		-
CERIM (7)=0-DC	DERFO		
market and a second of the contract of the con	DERED		10 - 1 - 1 - 1 - 1 - 1
MPOT (3, 8) = 0, DP	DER FQ		
CO TO 4	DERFO		-
c	DEREG		
C IF MUPTED THE ENTIRE MASS LOSS AND HEATING BLOCK OF EQUATIONS	DEDED	07	
A BANGA CARANTA AND AND AND AND AND AND AND AND AND AN	DEREO	,	
3 IFIMOPT .EQ .0 IGO TO E	CEREO		
C	DER FO I		
C SUBROUTINE AERODY PERFORMS AERO. HEAVING CALCULATIONS WHEN	DEREGI	- 1 (0000)	-
and the second s	DERFOI		
CALL AERDDY	DERECT		
IF(MHEAT .EQ.O)GO TO 8	DER FOI		
2 PM B 4   Mark Called 6   N mich called 6   N m	DERFO		-
	DERFOI		
	DEREGI		
C TEMPERATURE. TOMALD INTEGRATES THE MASS LCSS PATES OVER THE	DEREGI		
C VEHICLE TO OBTAIN THE RATE OF CHANGE IN WEIGHT DUE TO ABLATION.	DEDEN!	LO D	i the measure out
C THE VALUE OF THE FOLLOWING DERIVATIVE IS CALCULATED IN TUMALO	DEDER !	110	
C DER IV (5) =W DOT	DEREGI		****
CALL MASSLO			
5 CALL TOMALO	PER EO I		A 15 0 (600) (60 × 1941)
CER LV(5)=WDOT	DEPFQI		
MOTION A DECEMBER PROPERTY TO A STATE OF THE	DERFO I		
C SUBROUTINE NOSEBL CALCULATES VEHICLE SHAPE CHANGE WHEN	DERECT		
C NOSTOP * 1. THE VALUES OF THE FOLLOWING DERIVATIVES ARE	DERFOI	1 111114	
The state of the s	PEP EQ 1		
The state of the s	DER EQ 1		H== : = - x .
6 IFINUSEUP.EQ.11GO TO 7	DER FOLI	19	

	CERIV('E) + C + DO	DER FO 120 DER FO 121
	00 TO 4	DEREO 122
	CALL NDSEBL	DER 60 123
	CERTVI 61=RNDOT	DEREQ 124
TAPPE OF T	CEK IV(7) =R BDOT	DERF0125
		DER EQ 126
	INALPH# THE NUMBER OF VALUES IN THE INPUT ANGLE OF ATTACK	CEREO 127
	TABLE WHEN GREATER THAN ZERD, CAUSES THE BYPASSING OF SUB-	
M	ROUTINE ROTATE.	
		DER EQ 129
140 1- 16	SUBRUUTINF ROT TO CALCULATES THE ANGLE OF ATTACK BY LNE UF	
	THU METHODS DEPENDING ON THE VALUE OF THE INPUT LCPT.	DERFO:31
	LOPT . G. IS AN UNCOUPLED THREE DEGREE OF FREEDEN CALCULATION.	DEREG132
	LOPT = 2 IS A SIMPLIFIED ANGLE OF ATTACK SCLUTION REQUIRING NO	
-	INTEGRATION.	DFR FO 134
4	CONT INUE	CERED135
	IFI INALPH.GT.O.CDC) GO TO 17	DERFQ136
		DEREQ137
	ANGLE OF ATTACK IS CALCULATED BY SUBROUTINE ROTATE.	DERFO138
	CALL RUTATE(DERIVALL)	DER EQ 139
	IFILL .EQ . 6 )RETURN	DER FQ 140
	CO TO 15	DERFO141
17	CONT INUE	DFR FQ 142
в в Пене	The second of th	DEREO143
	ttt=-1	
Firelia i i	ALPHA=TABLE(Z,HTAB,ALPTAB,1NALPH,LLL)/57.2957800	DERFQ145
		DERFO146
<del></del>	ALPR IM = ALPHA CC 18 1J = 8,13	
		CERFQ147
691 g 1	CER IVI IJ = 0.00 C	DEPEQ 148
41.0	THE THOSE	DER EQ 149
19	CONTINUE	Defector
		DEREC 151
- Ini-im industria	SUBROUTINE DRAGGO PERFORMS CALCULATIONS FOR DRAG CLEFFICIENTS	DERFQ157
	MAXCO-NUMBER OF VALLES IN THE INPUT DRAG COFFFICIENT TABLE,	DER E0 153
	· · · · · · · · · · · · · · · · · · ·	
ni nini	COTAB. IF GREATER THAN ZERO, THE DRAG CCEFFICIENT 15 HEAC IN	
n Hein Ku <del>ni</del> n	AND SUBROUTINE DRAGGO IS HYPASSED.	
en <del>elek</del> rice <del>an</del> Arabi	AND SUBROUTINE ORAGEO IS RYPASSED.	CEREQ154
त्य ज्येन्द्रम्य (राज्यस्य स्थानसम्बद्धाः	AND SUBROUTINE DRAGGO IS HYPASSED.	DEREQ154 DEREQ155
त्या भीवके शासमा भीवके अगस्य	AND SUBROUTINE DRAGGO IS RYPASSED.  IF MAXCO NF . 0 160 TO 13  CALL DRAGGO	DEREQ154 DEREQ155 DEREQ156 DEREQ157
ed edeale (com	AND SUBROUTINE DRAGGO IS RYPASSED.  IF (MAXCO.NF.0)60 TO 13  CALL DRAGGO 60 TO 14	DEREQ154 DEREQ155 DEREQ156 DEREQ157
de de se estado de la como de la	AND SUBROUTINE DRAGGO IS RYPASSED.  IF(MAXCD.NF.0)60 TO 13  CALL DRAGGO GO TO 14  LLC = 1	DEREQ155 DEREQ155 DEREQ156 DEREQ157 DEREQ158 DEREQ159
etin edilələ	AND SUBROUTINE DRAGGO IS RYPASSED.  IF(MAXCD.NF.0)GO TO 13  CALL DRAGGO GO TO 14  LLL=-1  EU-TABLEEZ.HTAB.CDTAB.MAXCD.LLLI	DER EQ 154 DER EQ 155 DER EQ 156 DER EQ 157 DER EQ 159 DER EQ 160
14	AND SUBROUTINE DRAGGO IS RYPASSED.  IF (MAXCD.NF.0)60 TO 13  CALL DRAGGO GO: TO 14  LLL=-1  CU-TABLECZ.HTAB.CDTAB.MAXCD.LLLI  CONTINUE	DEREO 154 DER FO 155 DER FO 156 DER FO 157 DER FO 159 DER FO 160 DER FO 161
14	AND SUBROUTINE DRAGGO IS RYPASSED.  IF (MAXCD NF . 0) GO TO 13  CALL DRAGGO GO TO 14  LLL = 1  CU-TABLE (Z . HTAB . CD TAB . MAXCD . LLLI  CONT INUE	DEREO 154 DER FO 155 DER FO 156 DER FO 157 DER FO 159 DER FO 160 DER FO 161 DER FO 161
14	AND SUBROUTINE DRAGGO IS RYPASSED.  IF (MAXCD NF. 0) GO TO 13  CALL DRAGGO GO TO 14  LLL = 1  CU-TABLETZ HTAB CDTAB MAXCD LLLI  CONTINUE  MAXMCD=NUMBER OF VALUES IN TABLE OF DRAG COEFF. INCREMENT.	DEREO154 DEREO155 DEREO156 DEREO157 DEREO158 DEREO159 DEREO160 DEREO161 DEREO162 DEREO163
	AND SUBROUTINE DRAGGO IS RYPASSED.  IF (MAXCD NF. 0) GO TO 13  CALL DRAGGO GO TO 14  LLL = 1  CU-TABLETZ HTAB COTAB MAXCD LLLI  CONTINUE  MAXMCD=NUMBER OF VALUES IN TABLE OF DRAG CCEFF. INCREMENT, WCDTAB, WHICH IS ADDED TO THE CO ORTAL NED FROM EITHER CRAGGO UP	DEREO154 DEREO155 DEREO156 DEREO157 DEREO159 DEREO160 DEREO161 DEREO162 DEREO163 RDEREO164
14	AND SUBROUTINE DRAGGO IS RYPASSED.  IF (MAXCD OF .0)GO TO 13  CALL DRAGGO GO TO 14  LLL = 1  CU-TABLETZ HTAB COTAB MAXCD LLLI  CONT INUE  MAXMCO-NUMBER OF VALUES IN TABLE OF DRAG COEFF. INCREMENT,  WCDTAB, WHICH IS ADDED TO THE CO ORTAL NED FROM EITHER CRAGGO OF  INPUT COTAB. WCDTAB IS BASEO ON THE INPUT CONSTANT REFERENCE	DEREO 154 DER FO 155 DER FO 156 DER FO 157 DER FO 159 DER FO 160 DER FO 161 DER FO 162 DER FO 163 RDER FO 164 DER FO 165
14	AND SUBROUTINE DRAGGO IS RYPASSED.  IFMAXCO.NF.0160 TO 13  CALL DRAGGO GO TO 14  LLL=-1  CU-TABLETZ.HTAB.CDTAB.MAXCO.LLLI  CONTINUE  MAXMCO-NUMBER OF VALUES IN TABLE OF DRAG COEFF. INCREMENT.  WCDTAB. WHICH IS ADDED TO THE CO ORTALAED FROM EITHER DRAGGO OF INPUT COTAB. WCDTAB IS BASED ON THE LAPUT CONSTANT REFERENCE AREA AWREF. BUT IS MULTIPLIED BY THE RATIO AWREF/AREF BEFORE	DEREO 154 DER FO 155 DER FO 156 DER FO 157 DER FO 159 DER FO 160 DER FO 161 DER FO 162 DER FO 163 RDER FO 164 DER FO 165 UER FO 165
14	AND SUBROUTINE DRAGGO IS RYPASSED.  IF MAXCO NF. 0160 TO 13  CALL DRAGGO GO TO 14  LLL = 1  CU-TABLETZ HTAB COTAB MAXCO LLLI  CONTINUE  MAXMCO NUMBER OF VALUES IN TABLE OF DRAG COEFF. INCREMENT,  WOTAB, WHICH IS ADDED TO THE CO OBTAINED FROM EITHER CRAGGO OF  INPUT COTAB. WOTAB IS BASED ON THE INPUT CONSTANT REFERENCE  AREA AWREF, BUT IS MULTIPLIED BY THE RATIO AWREF/AREF BEFORE  BEING AUDED TO CO.	DEREO 154 DEREO 155 DEREO 156 DEREO 157 DEREO 159 DEREO 160 DEREO 161 DEREO 162 DEREO 163 RDEREO 165 GEREO 165 GEREO 166 DEREO 167
14	AND SUBROUTINE DRAGGO IS RYPASSED.  IFMAXCO.NF.0160 TO 13  CALL DRAGGO GO TO 14  LLL=-1  CU-TABLETZ.HTAB.CDTAB.MAXCO.LLLI  CONTINUE  MAXMCO-NUMBER OF VALUES IN TABLE OF DRAG COEFF. INCREMENT.  WCDTAB. WHICH IS ADDED TO THE CO ORTALAED FROM EITHER DRAGGO OF INPUT COTAB. WCDTAB IS BASED ON THE LAPUT CONSTANT REFERENCE AREA AWREF. BUT IS MULTIPLIED BY THE RATIO AWREF/AREF BEFORE BEING AUDED TO CO.  IFMAXWCD.EQ.0160 TO 15	DEREO 154 DEREO 155 DEREO 156 DEREO 157 DEREO 159 DEREO 160 DEREO 161 DEREO 162 DEREO 163 RDEREO 165 GEREO 165 GEREO 165 DEREO 167 DEREO 168
14	AND SUBROUTINE DRAGGO IS RYPASSED.  IF MAXCO NF. 0160 TO 13  CALL DRAGGO GO TO 14  LLL = 1  CO-TABLECZ. HTAB. CDTAB. MAXCO . LLLI  CONT INUE  MAXWCO NUMBER OF VALUES IN TABLE OF DRAG CCEFF. INCREMENT.  WCDTAB. WHICH IS ADDED TO THE CD ORTAL NED FROM EITHER CRAGGO UP  INPUT COTAB. WCDTAB IS BASED ON THE INPUT CONSTANT REFERENCE  AREA AWREF. BUT IS MULTIPLIED BY THE RATIO AWREF/AREF BEFORE  BEING AUDED TO CD.  IF MAXWCD = EQ. 01GO TO 15	DEREO 154 DEREO 155 DEREO 156 DEREO 157 DEREO 159 DEREO 160 DEREO 161 DEREO 162 DEREO 163 RDEREO 165 GEREO 165 GEREO 166 DEREO 167 DEREO 168 DEREO 169
14	AND SUBROUTINE DRAGGO IS RYPASSED.  IF MAXCO NF. 0160 TO 13  CALL DRAGGO GO TO 14  LLL = 1  CU-TABLE ( Z. HTAB. CD TAB. MAXCO . LLLI  CONT INUE  MAXMCO = NUMBER OF VALUES IN TABLE OF DRAG COEFF. INCREMENT.  WCDTAB. WHICH IS ADDED TO THE CD ORTAL NED FROM EITHER DRAGGO OF INPUT COTAB. WCDTAB IS BASED ON THE INPUT CONSTANT REFERENCE AREA AWREF. BUT IS MULTIPLIED BY THE RATIO AWREF/AREF BEFORE BEING AUDED TO CO.  IF MAXWCD = EQ. 01GO TO 15  LLL = I  WIRECO = TABLE ( Z. HHTAB. NCD TAB. MAXNCD . LLL)	DEREO 154 DEREO 155 DEREO 156 DEREO 157 DEREO 159 DEREO 160 DEREO 161 DEREO 162 DEREO 163 RDEREO 165 GEREO 165 GEREO 165 DEREO 167 DEREO 168
property (April 1)	AND SUBROUTINE DRAGGO IS RYPASSED.  IFMAXCO.NF.0160 TO 13  CALL DRAGGO GO TO 14  LLL=-1  CU-TABLETZ.HTAB.CDTAB.MAXCO.LLLI  CONTINUE  MAXMCO-NUMBER OF VALUES IN TABLE OF DRAG COEFF. INCREMENT.  WCDTAB. WHICH IS ADDED TO THE CO ORTALAED FROM EITHER DRAGGO OF INPUT COTAB. WCDTAB IS BASED ON THE LAPUT CONSTANT REFERENCE AREA AWREF. BUT IS MULTIPLIED BY THE RATIO AWREF/AREF BEFORE BEING AUDED TO CO.  IFMAXWCD.EQ.0160 TO 15	DEREO 154 DEREO 155 DEREO 156 DEREO 157 DEREO 159 DEREO 160 DEREO 161 DEREO 162 DEREO 163 RDEREO 165 GEREO 165 GEREO 166 DEREO 167 DEREO 168 DEREO 169
and the state of t	AND SUBROUTINE DRAGGO IS RYPASSED.  IF MAXCO NF. 0160 TO 13  CALL DRAGGO GO TO 14  LLL = 1  CU-TABLECZ. HTAB., CDTAB, MAXCO . LLLI  CONTINUE  MAXMCO NUMBER OF VALUES IN TABLE OF DRAG CCEFF. INCREMENT,  WCDTAB, WHICH IS ADDED TO THE CD OBTAINED FROM EITHER CRAGGO OF  INPUT COTAB. WCDTAB IS BASEO ON THE INPUT CONSTANT REFERENCE  AREA AWREF. BUT IS MULTIPLIED BY THE RATIO AWREF/AREF BEFORE  BEING AUDED TO CO.  IF MAXMCD. EQ. 01GO TO 15  LLL = -1  HIRECO-TABLECZ. WHTAB, NCDTAB, MAXNCD. LLL)  CO-COLUMNICO MARREF MAREF	DEREO 154 DEREO 155 DEREO 156 DEREO 157 DEREO 159 DEREO 160 DEREO 161 DEREO 162 DEREO 163 ROBREO 164 DEREO 165 DEREO 166 DEREO 167 DEREO 167 DEREO 167 DEREO 170 DEREO 171
property (April 1)	AND SUBROUTINE DRAGGO IS RYPASSED.  IF MAXCO NF. 0160 TO 13  CALL DRAGGO GO TO 14  LLL = 1  CU-TABLECZ. HTAB., CDTAB, MAXCO . LLLI  CONTINUE  MAXMCO NUMBER OF VALUES IN TABLE OF DRAG CCEFF. INCREMENT,  WCDTAB, WHICH IS ADDED TO THE CD OBTAINED FROM EITHER CRAGGO OF  INPUT COTAB. WCDTAB IS BASEO ON THE INPUT CONSTANT REFERENCE  AREA AWREF. BUT IS MULTIPLIED BY THE RATIO AWREF/AREF BEFORE  BEING AUDED TO CO.  IF MAXMCD. EQ. 01GO TO 15  LLL = -1  HIRECO-TABLECZ. WHTAB, NCDTAB, MAXNCD. LLL)  CO-COLUMNICO MARREF MAREF	DEREO 154 DEREO 155 DEREO 156 DEREO 157 DEREO 159 DEREO 160 DEREO 161 DEREO 162 DEREO 163 ROBREO 164 DEREO 165 DEREO 166 DEREO 167 DEREO 167 DEREO 167 DEREO 170 DEREO 171
	AND SUBROUTINE DRAGGO IS RYPASSED.  IF MAXCO NF. 0160 TO 13  CALL DRAGGO GO TO 14  LLL = 1  CU-TABLETZ. HTAB., CDTAB. MAXCO . LLLI  CONTINUE  MAXMCO = NUMBER OF VALUES IN TABLE OF DRAG CCEFF. INCREMENT,  WCDTAB. WHICH IS ADDED TO THE CO ORTAL NED FROM EITHER DRAGGO OF  INPUT COTAB. WCDTAB IS BASED ON THE INPUT CONSTANT REFERENCE  AREA AWREF. BUT IS MULTIPLIED BY THE RATIO AWREF/AREF BEFORE  BEING AUDED TO CO.  IF (MAXMCD = EQ. 01GO TO 15  LLL = 1  WIRECO = TABLETZ. WHTAB. NCDTAB. MAXWCD . LLLI  CO = COLWIRECO = AWREF / AREF	DEREO 154 DEREO 155 DEREO 156 DEREO 157 DEREO 159 DEREO 160 DEREO 161 DEREO 162 DEREO 163 RDEREO 164 DEREO 165 DEREO 165 DEREO 166 DEREO 167 DEREO 167 DEREO 170 DEREO 171 DEREO 173
	AND SUBROUTINE DRAGGO IS RYPASSED.  IF MAXCO NF. 0160 TO 13  CALL DRAGGO GO TO 14  LLL =-1  CU-TABLECZ. HTAB., CDTAB., MAXCO . LLLI  CONT INUE  MAXMCO = NUMBER OF VALUES IN TABLE OF DRAG CCEFF. INCREMENT.  WCDTAB., WHICH IS ADDED TO THE CD ORTAL NED FROM EITHER CRAGGO UP  INPUT COTAB. WCDTAB IS BASED ON THE INPUT CONSTANT REFERENCE  AREA AWREF. BUT IS MULTIPLIED BY THE RATIO AWREF/AREF BEFORE  BEING AUDED TO CD.  IF MAXWCD = EQ. 01GO TO 15  LLL =-1  HIRECO = TABLE(2. WHTAB., NCD TAB., MAXWCD . LLL)  CO = CDEWIRECO = AWREF / AREF  SUBROUTINE TEQUAT CALCULATES THE TRANSLATIONAL TRAJECTORY  DER IVATIVES.	DEREO 154 DEREO 155 DEREO 156 DEREO 157 DEREO 159 DEREO 160 DEREO 161 DEREO 162 DEREO 163 DEREO 164 DEREO 165 DEREO 165 DEREO 165 DEREO 166 DEREO 167 DEREO 170 DEREO 171 DEREO 173 DEREO 174
	AND SUBROUTINE DRAGGO IS RYPASSED.  IF MAXCO NF. 0160 TO 13  CALL DRAGGO GO TO 14  LLL =-1 CO-TABLECZ. HTAB., CDTAB., MAXCO., LLLI CONTINUE  MAXMCO = NUMBER OF VALUES IN TABLE OF DRAG COEFF. INCREMENT., WCDTAB., WHICH IS ADDED TO THE CO OBTAINED FROM EITHER DRAGGO UP INPUT COTAB. WCDTAB IS BASED ON THE INPUT CONSTANT REFERENCE AREA AWREF. BUT IS MULTIPLIED BY THE RATIO AWREF/AREF BEFURE BEING AUGO TO CO.  IF MAXMCD = EQ. 01GO TO 15  LLL =-1 WIRECO = TABLECZ. WHTAB. NCDTAB. MAXNCD. LLLI CO = COEWIRECO = AWREF / AREF  SUBROUTINE TEQUAT CALCULATES THE TRANSLATIONAL TRAJECTORY DERIVATIVES.  CONTINUE	DEREO 154 DEREO 155 DEREO 156 DEREO 157 DEREO 159 DEREO 160 DEREO 161 DEREO 163 ROEREO 164 DEREO 165 VEREO 166 DEREO 167 DEREO 167 DEREO 167 DEREO 170 DEREO 171 DEREO 173 DEREO 174 DEREO 174 DEREO 174
	AND SUBROUTINE DRAGGO IS RYPASSED.  IF MAXCO NF. 0160 TO 13  CALL DRAGGO GO TO 14  LLL =-1  CU-TABLECZ. HTAB., CDTAB., MAXCO . LLLI  CONT INUE  MAXMCO = NUMBER OF VALUES IN TABLE OF DRAG CCEFF. INCREMENT.  WCDTAB., WHICH IS ADDED TO THE CD ORTAL NED FROM EITHER CRAGGO UP  INPUT COTAB. WCDTAB IS BASED ON THE INPUT CONSTANT REFERENCE  AREA AWREF. BUT IS MULTIPLIED BY THE RATIO AWREF/AREF BEFORE  BEING AUDED TO CD.  IF MAXWCD = EQ. 01GO TO 15  LLL =-1  HIRECO = TABLE(2. WHTAB., NCD TAB., MAXWCD . LLL)  CO = CDEWIRECO = AWREF / AREF  SUBROUTINE TEQUAT CALCULATES THE TRANSLATIONAL TRAJECTORY  DER IVATIVES.	DEREO154 DEREO155 DEREO156 DEREO157 DEREO159 DEREO160 DEREO161 DEREO162 DEREO163 RDEREO164 DEREO165 UEREO166 DEREO167 DEREO167 DEREO170 DEREO171 DEREO173 DEREO174 DEREO176
	AND SUBROUTINE DRAGGO IS RYPASSED.  IF MAXCO NF. 0160 TO 13  CALL DRAGGO GO TO 14  LLL =-1 CO-TABLECZ. HTAB., CDTAB., MAXCO., LLLI CONTINUE  MAXMCO = NUMBER OF VALUES IN TABLE OF DRAG COEFF. INCREMENT., WCDTAB., WHICH IS ADDED TO THE CO OBTAINED FROM EITHER DRAGGO UP INPUT COTAB. WCDTAB IS BASED ON THE INPUT CONSTANT REFERENCE AREA AWREF. BUT IS MULTIPLIED BY THE RATIO AWREF/AREF BEFURE BEING AUGO TO CO.  IF MAXMCD = EQ. 01GO TO 15  LLL =-1 WIRECO = TABLECZ. WHTAB. NCDTAB. MAXNCD. LLLI CO = COEWIRECO = AWREF / AREF  SUBROUTINE TEQUAT CALCULATES THE TRANSLATIONAL TRAJECTORY DERIVATIVES.  CONTINUE	DEREO 154 DEREO 155 DEREO 156 DEREO 157 DEREO 159 DEREO 160 DEREO 161 DEREO 162 DEREO 163 DEREO 164 DEREO 165 UEREO 166 DEREO 167 DEREO 167 DEREO 170 DEREO 171 DEREO 172 DEREO 173 DEREO 174 DEREO 175 DEREO 176 DEREO 177

CERIV(2)=DERIV(2)+DERIV(3)	
	DEREQ181
C(! 16 J=4, 16 )	DER FO 182
16 CERIV(J)=DER LV(J)*DERIV(3)	DERFQ193
RETURN	DER FQ 184
2 LL *6	DER EQ 185
WR ITE( 6, 1000)7	DER FQ . H6
LUGU FORMATI THO TOX, 14HZ IS NEGATI VE (E12.5.1H) )	DERFO187
O PERLANA.	D REQ 188
END END	DER FO 189
ENU	neventa.
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IMPLICET-REAL+8-(A-H+O-Z)	DIVML	1 2
SUBROUTINE DIVMLT(A.B.C.D.E.F)	DIVML	3
CIRCULATER A LANGE AND A LANGE		•
SUBROUTINE DIVMLT CALCULATES THE REAL AND IMAGINARY COMPO- NENTS OF THE FIRST-ORDER NEUMANN FUNCTION USING THE ZEROTH	DIVML	5
URDER NEUMANN FUNCTION COMPONENTS.	DIVML	·
Compared to the control of the contr	DIAME	Δ
R=C++2&D++2	DIVML	9
- IF (R11,2,1)	DIVML 1	
2 F*0.000	-	
F=0.000	DIVML 1	2-
GO TO 3	DIVML 1	-
1 CONTINUE	-	
0	DIVML 1	-
H==0/R	DIVML 1	
E*A*G-B*H		
FadeHCReC	DIVML 1	-
3 RETURN	DIVML 2	-
END	DIVML 2	
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A Secret Free transfer from the secret was seen and the secret was a secret with the second secret with the second secret with the second seco	- 100 te	
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CORAGCO
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      DRAGE.
       SUBROUTINE DRAGCO
                                                                          DRAGE
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                                                                          DRAGE
                                                                          DKAGC
-C.---
                                                                          UHAGE
      DIMENSION A(514),B(21),CDFINF(2,2,2),TW(4,8),MDGT(4,8).
                                                                          UKAGC
     1------ OCCUR140001+NOCCUR1301------
                                                                          DKAGE.
C
                                                                          UKAGC
      EQUIVALENCE- | .....
                                                                          DRAGE 10
     1(OCCUR(001), AREF ), (OCCUR(002), ALPHA ), (OCCUR(003), ALPRIM),
                                                                          DHAGL 11
     21OCCUR(009), COURAGE, (OCCUR(010), CAPL ...), (OCCUR(011), COSLAM),
                                                                          DRAGE 12
      3(OCCUR(016),CD
                       ),(DCCUR(O17),CPE
                                             ).(OCCUR(OLB).CP# ),
                                                                          DRAGE 13
     4(UCCUR(021),D ---- ),(OCCUR(026),GAMF ),(OCCUR(028),GAMMA ),...
                                                                          DRAGE .14
     5(OCCUR(029), HSRTO ), (OCCUR(032), LAMDA ), (OCCUR(033:, LA
                                                                  ٠,
                                                                          DRAGE 15
     6(OCCUR(035),MINF ...),(OCCUR(036),ME
                                             ).(OCCUR(042).PI
                                                                          DRAGE . 16
      7(OCCUR(048),PE
                         1,(OCCUR(049),PINF
                                                                          DRAGE 17
     EQUIVALENCE
                                                                          UKAGC 18
     1(OCCUR(055),RH0[NF),(OCCUR(055),RH0[N1),(OCCUR(061),RH0E
                                                                          DRAGE 19
     2(OCCUR(062), REYL___), (OCCUR(064), SINT__), (OCCUR(067), SINTM_),
                                                                          DK4GC .. 20 ..
     3(OCCUR(669), THETAD), (OCCUR(070), TANT ), (OCCUR(072), TINF ),
                                                                          DRAGE 21
     4(OCCUR(074), TWO ...), (UCCUR(075), T ...
                                             ).(OCCJR(077).TCRIT ).
                                                                          DRAGE 22
     5(OCCUR(078), TECON ), (OCCUR(079), TE
                                              ). (OCCURIOSO), TIMER 1
                                                                          DRAGC 23
      EUUIVAL ENCE
                                                                          DRAGE 24
     1 (OCCUR(082).V
                         1,(OCCUR!083),VE
                                             ),(OCCUR(086),WDOT ),
                                                                          DRAGL 25
     2(UCCUR(089) +XBARST) + (OCCUR(090) + XBAR __] + (OCCUR(091) +Z ...____) +
                                                                          DRAGE_26
     3(OCCUR(092),ZTR
                         1,(OCCUR(093),ZETA
                                                                          DRAGE 27
                                             ).(OCCUR(095),GRATE ).
                       --),(UCCUR(099),CDB
     4(OCCUR(098),CDP
                                             ).(OCCUR(100).COI
                                                                          DRAGC 28
     5(OCCUR(101),CDPO ),(OCCUR(126),XBAR1 ),(OCCUR(148),TWST
                                                                          DRAGE 29
     610CCUR[197], FACTR9], (OCCUR[225], HWBAR )
                                                                          DRAGE 30
      EQUIVALENCE
                                                                          URAGE 31
     1(OCCUR(234), DELCDP), (OCCUR(235), DECDFP), (OCCUR(236), DECFTC).
                                                                          DRAJC 32
     2(OCCUR(237), XUP ), (OCCUR(238), XLOW 1, (OCCUR(239), X1UP ),
                                                                          DRAGE 33
     3(OCCUR(240), X1LOW ), (OCCUR(246), TZTEST)
                                                                          DRAGE 34
      EQUIVALENCE
                                                                          UKAGC 35
      - DRAGE 30
     2(UCCUR(2644), TW(1,1)),(OCCUR(2708),MDOT(1,1)),
                                                                          DRAGE 37
     3(OCCUR(2793),CDFINE(1,1,1)).....
                                                                          DRAGE. 38
      EQUIVALENCE
                                                                          DRAGE 39
    -- 1 (NOCCURIO3)+ -- MUPT)+(NOCCURIO7)+--- LCPT)+(NOCCURIO)+ MHEAT)
                                                                         .. DRAGE 40
C
                                                                          DRAGE 41
      COMMON OCCUR ---
                                                                          DRAGL 42
                                                                          JRAGC 43
                                                                          DRAGE 44
                                                                          DRAGE 45
           SUBROUTINE DRAGGO CALCULATES THE DRAG COEFFICIENT WHEN INPUT DRAGG 40
- C
C
         DRAG COEFFICIENT OPTION IS NOT USED.
                                                                          DRAGE 47
C
                                                                          DRAGC 48
           FREE MOLECULE FLOW REGIME.
                                            XBAR1 ISGREATER THAN OR EQJALDRAGE 49
          TO XIUP.
                                                                          DRAGE..50
C
           STRONG INTERACTION FLOW REGIME.
                                                                          URAGC 51
          AND XBAR-GREATER-THAN OR EQUAL TO XUP.
                                                                          DRAGE 52
           FAIRING REGIME BETWEEN FREE MOLECULE AND STRONG INTERACTION.
                                                                          DRAGE 53
         XBAR1 IS LESS THAN X1UP AND GREATER THAN OR EQUAL TO X1LOW.
                                                                          URAGE. 54
                                                                          UHAGE 55
                                                                          DRAGE 56
      PEPINF = PE/PINF
                                                                          DRAGE 57
      SURT3=1.732050807568877D0
                                                                          DRAGE 58
       TEMLAM=1.0DO-COSLAM*COSLAM
                                                                          JKAGC 59
```

F1K=.9D0GSINTH+(119D0G.0108D0+SINTH)	ORAGE 60
ALPHAD=180.0D0+ALPHA/P1	DRAGE 61
CURVE FIT FOR PRESSURE DRAG COEFF. AT ZERO ANGLE OF ATTACK.	DRAGE 63
THE SET OF COEFFICIENTS UTILIZED IS DETERMINED BY THE VALUE OF	
THETAD, CONE HALF ANGLE IN DEGREES.	DRAGE 65
-N=312 ···· ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - ··· - · · · · · · · · · · · · · · · · · · · ·	URAGE 66
1F(THETAD.GT.20.0D0)GU TD 200	DRAGE 67
N=247.	-URAGC - 68
IF(THETAD.GT.10.000)GU TO 200	DRAGE 69
	ALL IN THE REAL PROPERTY.
200 X=1.0D0/MINF	DRAGC 71
Y=LAMDA	DRAGE 73
00 201 I=1,3 1I=1-1	DRAGC 75
I SUB1=NGI I TEMI=X++LI	DRAGE 77
00 201 J=1,3 	UKAGC 79
	DRAGC 80
1 SUB 2 = 1 SUB 1 6 3 + J J	URAGE BI
TEMJ=1.000	DRAGE 82 .
LC++Y=LM3T(O.3M.CL)71	URAGE 83
IF(JJ.NE.O)TEMJ=Y**JJ DD 201 K*1.4	DRAGE 84
M 4 - M - 1	DRAGE H5
201_CUPO=CDPO&A4.ISUB2&9*KK1*TEHJ*TEMI*ZZ**KK	DRAJC 86
	DRAGC 87
COPLED IS A SHARP CONE PRESSURE DRAG COEFFICIENT FOR THE	DRAGE 88
CLUCK THETA.	DRAGE 84
CDPLEO=2.0D0*PE/(RHOINF*V*V)	DRAGE 90
	DRAGE 91
CALCULATION OF MULTIPLIER WHICH CORRECTS COP FOR ANGLES OF	DRAGE 92
ATTACK LESS THAN UR EQUAL TO 4 DEGREES.	DRAGE 93
ATTACK LESS THAN UR EQUAL TO 4 DEGREES. — IF(DABS(ALPHAD).GT.4.000)GO TO 220 COLCDO-1.000	DRAGE 94
COLCDO=1.000	DRAGE 95
IFTALPHAD.EQ.O.ODO)GO TO 230	DRAGE 96
	howar by
Y*DABS(ALPHAO)	DRAGE 98
	ODATE DO
ZZ=LAMOA  CDLCDO#0000 wassassastanamas stransistant tipe of the second stransistant tipe of th	DRAGGIOO
00 202 1-1-4	DRAGC 101
00 202 [+1,4	DRAGCIOZ
ISUB1=421611	DRAGE 103
DO 202 J=1,3	DRAGE 105
	DRAGGLOS
ISUB2=ISUB164+JJ	DRAGC107
	DHAGG 109
DO 202 K=1,3	DRAGELLO
THE TANK TO AND THE TANK THE T	DRAGGILL
TEMK=1.000 IF(KK.NE.0)TEMK=22**KK	DRAGCILZ
I I I I I I I I I I I I I I I I I I I	UNAGLILZ
202 CDLCDO=CDLCDOGA11SUB2G12*KK)+TEM1+TEMJ+TEMK	A
GU TU 230	UNAGCILS
Control of the state of the sta	UKAGUALO
CALCULATION OF MULTIPLIER WHICH CORRECTS. COP FOR ANGLES OF	JR430117
	DAAGCILB
G	DRAGLILA

C IF ANGLE OF ATTACK IS GREATER THAN 40 DEGREES THEN ALPHA DE	
G	
IF(TEML.GT.40.000)TEML=40.000	DAAGCA23
Y=DLUG10(TEML)	DAAGC125
we set work at the con-	and the second s
FUN=0.0D0	DRAGC127
11=1-1	DRAGG129
	DRAGC 130
TEM1=X++[I	DRAGCISI
TEM1=X**II  DI) 222 J#1+3	DRAGC132
JJ=J-1	DR4GC + 5 5
. I SUB2# I SUBL 64#JJ	
TEMJ=Y**JJ	UKAGC 135
00 222 K=1,3	
KK=K-1	URAGC 137
TEMEST ODD	DHAGC138
ICIKK ME. OTTEMKETZE WKK	DRAGG139
222_FUN=FUNGA 11 SUB2G1 2*KK 1 *TEM1+TEM1+TEMK	
TECEUN-LIT-0-000) FUN=0-000	UKAGC141
CDLCDO#10.000**FUN :	DKAGC142
230 CONTINUE	DRAGC 143
. c	DRAGU144
COP=CDPO+COLCDO	URAGE 145
THE RESIDENCE OF THE PARTY OF T	URAJC 146
IFIXBAR LT.XLOWIGO TO 1	DRAGGLA7 .
C WHEN XBAR HAS VALUE LESS THAN XLOW, ALL RAREFIED AIR	JRAGC146
	DRAGU149
CPERFORMED.	UHAGCISO
•	URAGE151
-TENTSG=TINF+(1.00&0.500+(GAMHA+1.00)+MINF+MINF)	UKAGC 152
TEM - TWET/TEMTEC	ORAGELSS
TEMB=DLOG(XBARST)	ORAGC154
SUM#O_0DO	DRAGC155
IF(THETAD.LT.15.000)GO TD 204	. URAGCA5 a
c .	URAGE157
SHARP CONE STHONG INTERACTION DRAG COEFF. FOR CONE HALF ANGL	EURAUC 158
C GREATER THAN OR EQUAL TO 15 DEGREES.	URAGE 159
100 - 000 181,2 - 01 188 KI 28 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	DRAJC 150
11=1-1	URAGCISI
THE RESIDENCE OF THE PROPERTY	DRAGC162
TEMS - TEMS - 11	DRACCISS '
00-203 J#1+4> ************************************	. URAGC 104
<u>1</u> − 1, = 1, 1,	DRAGU155
I SUB2=1 SUB1 G2*JJ	DRAGCIBB
TEM2=THETAD**JJ	DRAGUL67
	URAGELLOO
KK*K-1	PAAGCIBY
1 SUB=1SUB268*KK	DRAULTO.
203 SUM=SUMGALISUB)+TEM1+TEM2+TEM+KK	DRAGLITA
COST#DEXP(SUM)	. DRAGCITZ
60 TO 3	DRAGG173
The companies of the sound of t	DRAGC17+
C SMARP CONE STRONG INTERACTION DRAG COEFF. FOR CONE HALF ANGL	
CLESS-THAN-15-DEGREES	
204 CUNTINUE	DRAGELTT
. at 1 of the OO 2 1 to 1 2 of the Oo the outside the outside of the Oo to 1 of t	DRAGGITE
II=I-1	DRAGULTS

ISUB1=200611	
TEM1=TEM3++[[	DRAGCLBL
JJ=J-1	DRAGC183
I SUB2= [ SUB] 62*JJ	DRAGC184
MM AN	NEACHIAR.
D() 2 K=1+2	DRAGC186
4 W . A . B . B	00446147
KK=K-1 	OHAGL188
2 SUM=SUMGA(ISUB)+TEM1+TEM2+TEM++KK	ORAGC189
CDST=EXP(SUM)	DRAGE 190
COSTACAL SOLL COMMENT CONTRACTOR AND CONTRACTOR OF THE CONTRACTOR	DRAGC191
FREE HOLECULE ORAG COSFFICIENT WITH ACCOMMODATION COEFF	
	ግወ ለመጠ ነወ እ
ZETA.  3-CDF= EXP(=SINTM=SINTM)	DRAGE 194
CDF=CDF+(1.DO/(SINTM+SQRT(PI))&O.5DO+SQRT(TWST/TINF)/(MINF+M	THE LA DRAWE 195
CDF=CDF4(1.DO/(SIN)M=SUR)(F1))&SINT+SQRT(F1+TWST-/TINF)/MIN	E DAAGCIGA
	116 A GC 1 Q 7
C OF=ZETA+CDF	DRAGC198
C DF=ZETA*CDF	URAGC199
NEWTONIAN DRAG COEFFICIENT.	DN400177
	DRAGC200
CAPP IS THE SHARP CONE PROBABILITY DISTRIBUTION AS A FU	NCTI UNDRAGE 202
OF KNUDSEN NUMBER.	DR4GC203
LAHW=COURAG+SQRT(2.2500+PI*TWST/(GAMMA*TINE))/MINE.	
LAMND=LAMN/D 1F(LAMND.LT.0+04D0) GO_TO_19	DRAGC 205
1F(LAMWD.LT.0.04D0) GO. TO 19	URAGG206
CAPP=0.D0	DRAGC207
TEN=DLOG(LANW/D)	DRAGC208
	DDAGC 200
18 CAPP=CAPPEB(I) *TEM**(I-1)	DRAGC2LO
GD TU 23 19 CAPP=0.506D0-0.14700=(DLDGLO(0.04D0/LANHD))	DKAGC212
	DR4GC2L3
par part of the pa	DRAGG214
SHARP CONE FREE MOLECULE DRAG COEFFICIENT.  COTREM#CAPP#(CDF-CON) & CON.	DRAGC215
COTREMECAPP (CDF-CON) &CON	DRAGE216
1F(LAMOA.LT.1.00-3160 TO 30	DRAGC217
The state of the s	DRAGC 218
COURT HOLDON C DO AC CORRE. ON SPHERICAL MOSE	DR45L219
CDFMS=0.000	DRAGCZZO
TEM-DLOG(REYL+D/(CAPL+MINF+FACTR9))	DRAGC 221
TEM-DLOG(REYL+D/(CAPL+MINF+FACTR9))  1F(DABS(TEM);LE.100-4)TEM-100-4	DRAGC222
IF TEM.GT.5.29800) TEM=5.29800	DRAGE 223
	DRAGE 224
1 00 31 31,20	DRAGE 225
31 CDFMS+CDFMS&A(J&173)+TEM++(J-1)	DRALCOZA
SLUNT COME FREE MOLECULE TOTAL DRAG COEFFICIENT.	00 400 224
BLUNT CUME PARE MUREUUR TUTAL URAU GUEFFILIENT.	DRAGC229
COFM=COFMS+COSLAM+COSLAMCCOTRFM+(1.000-LAMDA+LAMDA)	DOACCORD
GO.70-32	DRAGC 231
	. UKRUL231
SHARP CONE FREE MOLECULE TOTAL DRAG COEFFICIENT.	DOAGE AND
30 COFH-COTRFH	DRAGC233
Constitution of the consti	UKAGC234
BLUNT COME STRONG INTERACTION DRAG COEFFICIENT. 32 CDS=(CDST-CDPLEC)+(11.000-LAMDA+LAMDA)+CUS(ALPRIM)6CDP.	UNAGUZIS
32 CDS=(CDST-COPLEC)+(1.000-LAMDA+LANDA)+CUS(ALPRIN) CCDP.	JR43C236
TECHBARILITIKNUPIGO TO 34	DRAGG237
Control of the state of the sta	UHAGC 238
BOSE WHISCHIS TOTAL DOAS COSSELLENT.	DRAGC239

	-CD=CDFM	
	RETURN	DRAGC 241
		DHAGC242
34	TERMOANS OF WILLOWS TO SE	1345 A L. C. A.A. A.
	- IF(XBAR1.GE.XILURIGU TU 35 IF(XBAR.LE.XUP)GO-TO-5	. ORAGCZ44
r		DRAGC245
	STRONG INTERACTION TOTAL DRAG COEFFICIENT.	. DKAGC246
•	CD=COS	DRAGC247
	LECTURN 2014 : 22 AMERICA ALABAMA AMERICA AMER	
C	A C I UNIT	DRAGC 249
	FAIRING-REGION-BETWEEN STRONG INTERACTION AND FREE MOLECULE	
	FLOW	DRAGCZŠI
ا عد		
		DRAGC 253
	CD=CDFM+W1&CDS+(1.0DO-W1) 	DAACC VSA
		DRAGC 255
	XUP=XBAR XLOW=XBAR=2.0D0	DRAGC255
	XLUW=XBAR=2.0D0	
	IF(XBAR.LE.2.0D0)XLOW=0.5D0	DRAGU257
	RETUIN	
C		DRAGC 259
С	CONTINUUM FLOW DRAG CALCULATIONS.	DRAGL25A
C	CHILL AND CHILL IN THE CONTROL OF TH	
C		URAGC 203
C	KEY FOR SKIN-FRICTION DRAG-COEFF. DESCRIPTION	DRAGC264
C	SHARP=1 BLUNT=2 TURBULENT=1 LAMINAR=2.	DRAGC 265
C	TURBUL ENT=1 L AMINAR=2	DRAGC266
C.	WITH BLOWING=1 NO BLOWING=2	DRAGLZ67
- C	COFINE (SHARP OR BLUNT, LAM. OR TURB. BLOWING OR NO BLOWING)	
C		DRAGC269
- C	BASE DRAG COEFFICIENT	DRAGC270
•	CONTINUE	DRAGGETI
Š	Y=OABS(HOOT)/(RHOIN1*V*AREF)	DKAGC 272
•	IF(Y.LT.0.000)Y=0.000	URAGC 275
		ORAGC 274
	Y=1.000/MINE	DRAGGATS
		DEAGCOTA
****		DRAGC277
	N=487 - IFIMINF.GE.7.ODCIN=495-	00000011
	DOGING A ODA	ING A SET DIES
	PBPINF=0.0D0 - D0 8 [=1,4	UNAUGET 7
	II=I-I 	DRAGC 28 L
	TEM1=X++11	URAGE 28 5
	- 00 8 J=1,3	
	11=1-1	ORAGE 285
-10-4	_ I SUB= I SUB1644JJ	
	TEMJ=1.000	DRAGC207
	EF(JJ.NE.O) TEMJ=Y#AJJ	
8	PBPINF=PBPINFGACISUBI+TEMI+TEMI	ORAGC269
	_CDB=(1.000-PBPINEJ+(X++2)/0.700	
C		DRAGC 291
9	P-GUNTINUE (1917-1919-1919) (1916-1919-1919-1919-1919-1919-1919-1919	URAGCEPE
	IF(XBAR.GE.XLOW)GO TO 10	DRAGC295
# 3 × 1994 • 84 × 1998		URAGC294
C.		DRAGCZ95
	TURBULENT-DRAG-CALCULATIONS.	DRAGCZ96
Ğ	1	URAGC297
Č.	SCHULTZ GRUNUW SKIN FRICTION DRAG COEFFICIENT.	DRAGCZYB
	HE=CPE+TE	URAGL 299

	HSTAHE=0.5D0&0.5D0*CPW*TW(3.8)/HE&0.099D0*HE*ME*(GAMMA=1.000) HSTAR=HSTAHE*HE	DRAGE 300 DRAGE 301
	1F(HSTAR.LE.1110+000) GO_TQ_21	DEVACENCE
1	TEM*PE/2116.000	ORAGE 204
	TEM=PE/2116.000 IF(TEM.GE.1.001)TEM=1.0D1 TSTAR=0.0D0	DRAGGEOG
	TETICAL ON	- DKAGG 304
1	00 20 [=].4	DRAGC 305
		URAGC 307
	TEM[=HSTAR*+11 DO 20 J=1+3	. DRAGC 309
411 1 10 10 10 10 10 10 10 10	DO 20 J#1+3	DRAJC310
	JJnJ-1	URAGC311
FF-18 0 1	ISUD=ISUB164+JJ	DRAGC 312
20	TSTAK=TSTAR&A(ISUB)+TEM1+(TEM++JJ)	DRAGC315
- 10010000 1000011 00 (540 V )-000	GO TO 22	DRAGC314
21	TCTAD=2. EGAARGAMCTAD	HUARCE TE
22	CONTINUE	DRAGERIA
	IF(TSTAR.LT.O.DO)CALL EXIT	DRAGC317
		URAGC 318
	MUSTAR#32.200#2.270#8#TSTAR##1.500/(TSTARC198.600)	
	- LTAU=2.5D060.1D0+DTANHLTAU/500.0D0-7D0) 60.4D0+DTANHLTAU/1000.D0-	DK460319
	17.00) GDTANH(TAU/2500.DO-5.8DO)	DRAGC321
	RHJSTA=(39.65D0+PE)/(2116.D0+ZTAU+TSTAR)	DRAGC322
C		URAUC 323
DHOM TO A	IFICAPL.GE.2.DOIGO TO 12	DRAGC324
	A(118)=-4.4666D0	URAGE325
	A(119)-156-00	DRAGC326
	A(120) =-665.00	URAGE 327 .
1 100 x 100 x 100 x 100 x 100	GO TO 13 CHILL OF PROPERTY PROPERTY AND ADMINISTRATION OF A CONTRACTOR OF THE PROPERTY OF THE	URAGC 328
n kimberahulandu ( ) I	A(119)=0.00 A(119)=0.00	DRAGE 330
	A#1201=0.00	DRAGC 341
	A(120)=0.00 	DRALC 332
Non-like Film India College		DRAGC 333
	TEMINCAPL ** II. 1990); compare souther souther souther the souther than t	MARCARA
51,141,7	A(118)=A(118)&A(11&400)+TEMI A(119)=A(119)&A(11&A07)+TEMI	DEACT 22.
ne <del>desplo</del> je de Rol Hill	AND THE RESERVE OF THE PROPERTY OF THE PROPERT	
12	#(120)=A(120)&A(11&414)=TEM1 TEM1=DLOG10(RHQSTA*VE/MUSTAR)	DRAGE 337
13	The state of the s	
- Civilin	TEM2-A(120)&TEM1+(A(119)&A(118)+TEM1) -REYSTA-RHOSTA+VE+CAPL/MUSTAR	DRAGC 53 9
	-REYSTAHRHOSTAHVEHCAPL/HUSTAR	
C		DRAGC 341
C	CORRECTION.	DRAGC343
-	_CFO=_3700+1_1500+RHOSTA+VE+VE/LV+V+RHOIN1+DLO31O(REYSTA)++2.584D0	JURAGE 344
	GFO-CFO+RHOIN1+V+V/(RHOE+VE+VE)	DRAGES45
	-CDF1NF(1.1.21=0.5D0+.B52D0+VE+VE+RHOSTA/(RHOIN1+TANT+V+V+TEM2)	JRAGC 346
C		DRAGUB47
	BLOWING CORRECTION TO SKIN FRICTION DRAG COEFF.	URAGC348
	COFINF(1.1.11*COFINF(1.1.2)/(1.0061.200*MD0T(3.8)/(RHOE*YE*CF0))	
	The second secon	
•	BLUMTNESS CORRECTION TO SKIN FRICTION DRAG COEFF.	DRAGE351
mark of the said	IFILAMDA.LT.0.32001CDFINF(2,1.1) +CDFINF(1,1.1) +(1.0D0-LAMDA+	
	1(0.80000.05200*NINF))	DKAGC353
	IF(LAMDA.GE.0.3200)CDEINE(2.1.1) = CDF INE(1.1.1) = (3.76400-0.0166400	
7716	1MINF) - COPINF12.1.21.COBINF12.1.11.COPINF11.1.2)/COPINF(1.1.1)	DRAGES5
-	FOUTUALS PERSONNALS TO THE DETURE TO TEST AND THE LIBERT TO THE STATE OF THE STATE	
		URAGE 357
6	INDUCED PRESSURE, CRAG COEFFICIENT.	
an saadii Bah	HW=HWBAR	JRAJC35 P
- 10 to 10 t	The state of the s	

HR=0.9D0+HSRT0	DRAGU351
	- DAAGU 20 &
Tem *RHOE *VE*CFO	DRAGC 363
DTHE1=CFO+(2.0D0+MOOT(3.8)/TEM-&1.0DC/(1.0D0&1.2D0+MOOT(3.8)/TEM)	
1/3.800	DRAGC355
DTHE2-DTHE1+(0.54700*HWHRGME*(0.53D0G0.68D0*HWHR) GME*ME*(0.083D0G	
10.10oD0 *HWHR))	DR430357
DTHE=DTHE 261.6D0*MODT-(3-8)/(3.6D0*RHCE*VE)	DKAGL368
COLCOP=1.11DO*TEMLAM*CDPLEO*DTHE*F1K*SQRT3*ME CDI=CDLCOP	UKAGLIST
CDI=CULCUP	DRAGES 70
C VALUE OF CUSUM FOR FULLY TURBULENT FLOW	
COSUMT=COFINF(2.1.1)&COLCOP	DHAGC 373
IF(LOPT.GE.3)GO TO 36	URAGC 375
IFITIMER. GE. TZTEST) GU TO 36	DRAGC376
C	DRAGC377
FAIRED VALUE FOR COSUM-BETWEEN LAMINAR AND TURBULENT FLOW	DRAGC376
TEML *CFOZTR*LA/1.500	DRAGG379
TEM2=CF0+LA++1.6D0/1.8D0	
TEM3=1.0DO-(TIMER-TZTR)/TF	UHAGC381
PBAR=(TEM1+TEM3++1.500-TEM2+TEM3++1.800)/(TEM1-TEM2)	
CDI=CDILAM*PBARG(1.000-PBAR1*CDI	DRAGC 53 3
COFINE(2.1.1) = COFINE(2.2.1) PBARE(1. CDC-PBAR) + COFINE(2.1.1)	
CDFINF(2,1,2)=CDFINF(2,2,2)*PBAR&(1.ODO-PBAR)*CD*INF(2,1,2)	DRAGC 385
CDSUN#CDIGCDFINE42+1+1)	
C	UHAGLBO7 ,
AVERAGE ANGLE OF ATTACK OVER CYCLE USED IN CORRECTING CDP.	
36 CONTINUE	DRAGE 389
IFITCRIT.LE.TIGO TO 15	DRAGC390
IFIT.LT.TECONIGO TO 15	DRAGE 391
CO-CDSUMECDBECDPO+(1.0DOEGRATE/T)	
RETURN	DRAGC 393
was C and the second of the se	DRAGC394
C TOTAL TURBULENT DRAG COEFFICIENT	ORAGC395
A DESCRIPTION OF THE PROPERTY	
CO=COSUMECOBECDP	DRAGC397
THE NAME OF THE PARTY OF THE PA	
C	DRAGC399
A DECEMBER AND DESCRIPTION OF A STORM OF THE DECEMBER OF THE RESERVE OF THE PERSON OF	
C LAMINAR DRAG CALCULATIONS.	UNAGC 40 L
10-HSTAHE=0.500E0.500+CPH+TH(2,8)/(CPE+TE)G0.093500+(GAMMA-1.0D0)+ME	
1ME	DRAGI4D3
REYSTA-REYLA COMMONOMICA MARCHANICA COMMONOMICA MARCHANICA COMMON COMPANION	
COFINF(1,2,2)=1.53UO+SURT(PEPINF/REYL)+(VE/V)++1.5DO/TANT	JR4G2405
-CDFINF(1,2,2)=CDFINF(1,2,2)*(HSTAHE+CPE+TE/(.2398DO+TINF))++(18	
XDO)	DRAGC 407
C CFO= NO BLOWING SKIN FRICTION COEFF. FOR USE_IN MASS LOSS	
C CORRECTION.	DR4GC409
CF0=1.15D0+TANT.*CDF.INF(1,2,2)+RH0IN1+V+V/(1.53D0+RH0E+VE+VE)	
C	URAGC 411
BLOWING CORNECTION TO SKIN PRICTION DRAG COEFF.	
CDFINF(1, 2, 1) = CDFINF(1,2,2)/(1.DO&2.00D0+MD0T(2,8)/(RH0E+VE+CF0))	
THE COMPANIEM CONTRACTOR OF THE TRANSPORT OF THE TRANSPORT OF THE TAXABLE OF	
C BLUNTNESS CORRECTION TO SKIN FRICTION DRAG COEFF.	DRAGU415
TENADLUGIO(REYL)	
IF(LAMDA.GE.0.200)N=472	DHAGC 41 7
IFILANDA.LT.O.2001N=457	DRAJE448
SUN=0+D0	Drage 41 4

	A COLUMN TO SERVICE CONTRACTOR CONTRACTOR SERVICE SERV	DRAGC420
		DIACTAIL
150	BLANESKIJ.	.UHAGC422
TEM.	1=1.00	DRAGC 425
	J=1.GO JJ.NE.O}TEMJ=LAMDA++JJ	DHAGC424
	16 1=1.5	DRAGC 425
		DRAGL426 -
1 2 4	- CHARTET	DRAGC427
14 (1)4	H=ISUHIGIC SUMEA(ISUB) *TEMJ*TEM**!!	.DRAGC428
A 18.00	eriora a a same mortal de la companya de la company	ロバルししゃとソ
COF	INF(2,2,2)=COFINF(2,2,1)+COFINF(1,2,2)/COFINF(1,2,1)	UKAGC430 .
	I MA TO TO THE PART TO A POLICY ATTENNESS OF THE ATTENDED TO A THE	DRAGC 451
	DELCOP. DECOFP. AND DECFTC ARE RESPECTIVELY THE LAMINAR	
postania i 4	INDUCED PRESSURE DRAG COEFFICIENT, PRESSURE INDUCED AND TRANS-	DHACCASS
	VERSE CURVATURE INDUCED SKIN FRICTION DRAG COEFFICIENTS.	DRAGCARA
		DRAGE 435
/ HW=	HWBAR	DRAGC436
	INDE LANDENT LEGACOL GRADOL FRANCISCO	
HR=	0.900*HSRTO	DRAGE 437
TEM	##HOE*VE*CFO	DRAGC 438
DTH	E1=CF0+(2.0D0+MOOT(2,8)/7EMG1.0D0/(1.0D061.25D0+MDOT(2,8)/TEM)	1084GC439
1/12	.000+SQRT3}	DRAGG 440
	2-ME+ME	Drage 441
Litti	a student	UHAGE 442
7.74	E2=0TH21+(A(283) &A (284)+FME2GHWHR+(A(285) &A(286)+FME2GHWHK+(	URAGE 443
1 4 4 7 3	87) CAL 288) + FME 26HHHR+(AL 289) CAL 290) + FME 21)))	DRAGE 444
The second of the second of	E=DTHE26HOOT (2,8)/(3.000+RHDE*VE)	DRAGC 445
DIH	CDP=1.3300+TEMLAM*CDPLE0+DTHE+F1K+SQRT3+ME	DRAGC 44 b
	LBF#1.53.00* EMLANGLUFLEUTD INCTTANTON TO THE SELECTION OF THE SELECTION O	DK4GC447
DEC	DEP-1.500+DTHE*TEMLAM +CDFINF(1.2.2)+F1K	
ог, стан <b>Д.Ф.(.+</b>	0.8230060.52400*TW(2.8)/FEGO.438+FME2)/(ME+SQRT(CAPL))	DRAGL449
OIN	F=0.0580060.968+TH(2.8)/(TINF+MINF+MINF)	
DEC	FTC=1.500+10.517D0&0.913D0+TW(2.8)/TE60.0484D0+FME2)	DRAGE450
10 76	MLAMWDYHEWCDFINF(1,2,2)/(FME2*TANT+DINF*SQRT(3.000*CAPL))	DRAGC451
601	*DELCOPLOECUFP CDECFTC	
CONTRACTOR OF THE		DRAGC 453
1.041	LOPT-GE. 3)GO. TO .4	DRAGC454
at the second		UKAGG422
	DEFINING QUANTITIES USED IN FAIRING BETWEEN LAMINAR AND	DRAGC456
A desire opposite	WIND THE PARTY CONTRACTORS.	DRAJC457
	TURBULENT FLOW REGIMES.	_DRAGC458
	The state of the s	DRAGC459
	TR-TIMER 1.000/(0.486670-4*V*DABS(SIN(GAMF)))	
		UKAGC 451
CO	ILAN-COI TEST-TETOSTE	
		DRAGE 453
4 CO	TINUE TO THE TOTAL THE TOTAL TO THE TOTAL TOTAL TO THE TO	IDACCAAA
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	(TCR)1-LE-17-GO TO 17	DKAGC 430
t #	(T.LT.TECON) GO TO 17	URAGE 467
C		URAGL468
	Manager and anice to the Attack durk cycle used in Correcting Cur-	UNAGLACY
n	COBACDICCUELNE(2.2.1)&COPO*11.DOCGRATE/TI	JK40641U.
Color House the color of the bear		DRAGLATI
	TURN	DRAGC472.
Triple of the state	EMPARTMENT FIRM	DRAGGATS
	COBECDISCOFINE(2,2,1)SCOP	JKASL474
	TURNALE	DRAGC475
RE	TURN	
Carrier paris 14	FAIRING BETWEEN STRONG INTERACTION AND LAMINAR FLOW-	DRAGE 477
Port die behande	PAIRING DEINEEN SINGA THICKNELTON WAS PASTANCE COM-	JRAGL 478
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525 TP1 =EL+SL/GSS	- DRESS 60
526 DELTA*DELTA*TP1	DRESS 61
527 TU=(TP1-1.0)/SL	ORESS 62
528 GU TO 510	DRESS 63
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535 WRITE (6.9)F	URESS 69
536 WRITE (0,2)(X(1), I=1,N)	DRESS 70
537 WKITE (6,1D)[G(I),I=1,N]	DKESS 71
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544 GU TO 523	DRESS 75
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3 FURMAT (7HODELTA=1PE14.5)	UKESS 79
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5 FURMAT (9HOCOLINEAR)	DRESS 81
6 FEIRMAT (9HOOVERFLOA)	DKESS 82
7 FORMAT (13HOERROR MATRIX)	DRESS 85
- 8 FORMAT (1H01P8E14.5/(1H08E14.5))	URESS 84
	URESS 85
9 FURMAT (3H0F=1PE14.5)	
9 FURMAT (3H0F=1PE14.5)	URESS 86
9 FURMAT (3H0F=1PE14.5) 10 FURMAT (3H0G=1P&E14.5/13H08E14.5)]	
9 FURMAT (3H0F=1PE14.5) 	DRESS 67
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9 FURMAT (3H0F=1PE14.5) -10 FURMAT (3H0G=1P&E14.5/(3H08E14.5)) -11 FORMAT (6E12.5) ENO	DRESS 67 DRESS 88
9 FURMAT (3H0F=1PE14.5) -10 FURMAT (3H0G=1P&E14.5/(3H08E14.5)) -11 FORMAT (6E12.5) ENO	DRESS 67 DRESS 88
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9 FURMAT (3H0F=1PE14.5) -10 FURMAT (3H0G=1P&E14.5/(3H08E14.5)) -11 FORMAT (6E12.5) ENO	DRESS 67 DRESS 88
9 FURMAT (3H0F=1PE14.5) -10 FURMAT (3H0G=1P&E14.5/(3H08E14.5)) -11 FORMAT (6E12.5) ENO	DRESS 67 DRESS 88
9 FURMAT (3H0F=1PE14.5) -10 FURMAT (3H0G=1P&E14.5/(3H08E14.5)) -11 FORMAT (6E12.5) ENO	DRESS 67 DRESS 88
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EFFEC
CEFFECT JUNE 3 ----
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       SUBROUTINE EFFECT
                                                                        EFFEC
       EFFEC
EFFEC
      RUDDON, NOCCUR, NOCCUR
      COMMON /CICCUR/ IOCCUR(320) -- COMMON /CPCCUR/ PCCUR(11770)
      DIMENSION TOP(90) . NOCCUR(30) . OCCUR(4000) ...... EFFEC
                                                               EFFEC
EFFEC
      DIMENSION SRS(9)
DIMENSION DUMMY(100)
                                                                        EFFEC 10
      EQUIVALENCE (IOCCUR(00001), IOP )
EQUIVALENCE (PCCUR(117571, PFD )
EQUIVALENCE (PCCUR(11758), HOIF )
EQUIVALENCE (PCCUR(3962), PD )
                                                                    EFFEC 11
EFFEC 12
EFFEC 13
                                                                      ____ EFFEC 14
      EQUIVALENCE (PCCUM(11598), SRS )
EQUIVALENCE (DCCUR(3901), DUMMY)
EQUIVALENCE (DCCUR(03965), S1GMA)
                                                                 EFFEC 15
     -DATA A. CON. EPS. 8 / .7071067811865475. .0500. .0000100. EFFEC 18 * .02275013194817919 /
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C
            SUBROUTING EFFECT CALCULATES THE QUANTITY PD. WHICH IS THE EFFEL 22
 C
      PROBABILITY THAT A DECOY WILL BE DISCRIMINATED AS BEING A CFFEC 23
                                                                         EFFEC 24
. C.
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C
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                                                                         EFFEC 27
     PD = 0.00
                                                                         EFFEC 28
 C.
                                                                       EFFEC 29
EFFEC 30
       00 11 1 = 1. 9
        IF (1.GT.3) GO TO 5 ----
       IF(1UP(163).EQ.1)PD=PD6SRS(1)+OCCUR(163952)
                                                                       Effet 11
                                                               EFFEC 32
      ... GJ 10 11 — — положения слемения выстана выстана в положения
EFFEC 37
    SIGMA = PD
                                                                      ..... EFFEC 38.
                                                                        eff es
                                                                      EFFEC 40
      TOLD = -2.00
                                                                         EFFEL 41
   TOLD = -2.00 EFFEC +4
                                                                         EFFEC 43
       K m O
                                                                       EFFEC. 44
 10 --- - K- = K- 6 - 1 ---
     TX = A+(TULD & DABS(TOLD)+CUN)
Z = .5DO+(1.DO & DERF(TX))
TNEW = TOLD -CON+OABS(TOLD)+(Y-PFD)/(Z-Y)
W = .5DO+(1.DO&DERF(A+TNEW))
                                                                         EFFEC 45
                                                    The second comment and the EFFEC 40
                                                        EFFEC 47
      IF(DABS(W-Y).LE.EPS+DABS(W)) GU TO 99
                                                                      #FFEC 30
      IF(K.EQ. 20) GO TO 90 ....
                                                                          EFFEC 51
       TOLD = THEM
                                                                      EFFEC >4
    . Y # W
                                                                      EFFEC 53
EFFEC 54
EFFEC 55
      GU TU 10
    90 PU = 1.000
       WKITE16,1001
                                                                         EFFES So
        RETURN
                                                                         EFFEC ST
 99
       CONTINUE
 C
                                                                          EFFEC 50
                                                                          EFFEL 59
 C
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C	PD = .5D0 + (1.0D0 & DERF(A+(TNEW & PO)))		EFFEC EFFEC	61
100	RETURN FORMAT(1HC. 16HERROR IN EFFECT. ) FNO	e dage i per i je	effec effec	64 65
	The last and approximation of the property of	0.0411		,
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CEVIL
                                                                                     FV IL
          14PL ICIT REAL+P (A-H, D-Z)
                                                                                     FV IL
       SUPPOUTING EVIL (22)
                                                                                     EV IL
                                                                                             3
¢
                                                                                     FV IL
       REAL *B MODT.NST. MOTWR.KI.K2.LBAR
                                                                                     FV IL
                                                                                             5
                                                                                     EV II.
       DIMENSION OCCUR (4CCr), NOCCUR (30), TW(4,8), QDCT(4,8), PDCT (4,8)
                                                                                     FV IL
                                                                                    FV IL
       EDUIVALENCE
                                                                                            0
                                                                                    EV IL
      MOCCURE COAD, BETA 1 D. LOCGUREOUS) SHETA? 1. LCCCUREO06) PET AS 3.
                                                                                    FV IL
      SCHOOLREGGT), BETA4 ), (UCC LC (C14), CP2
                                                   1. ( CCCUR (022) + DELRHU).
                                                                                    FV IL
                                                                                            11
      BICCOURTERSAL, CREST 1, (OCCURTORS) .F.
                                                   1.(CCCUR(929),HSRTJ ),
                                                                                    EV IL
      TEUCCUPE DE LARFE
                            INTUCCUREGIES HIS
                                                                                    EV IL
                                                                                           13
       WELCOUR CLACE, NIST
                            FILLOCUPICATIONS
                                                   1+CCCUR(058) + RHC2
                                                                                    EV IL
      COCCUPIT ABL. SPO
                            1, (CCC LR (C74) , Two
                                                   1.100000011.2
                                                                                    EV IL
       7(accust 092), ZTF
                            ). ( TIMIT, (SELLAUDON).
                                                                                    EV IL
      SECCOURT 1901, FACTR 2), (INCOURTED), FACTR31, LECCURE192), FACTR41,
                                                                                    EV IL
                                                                                           17
      SCOCCURE 1931, FACTRS), ECCCUR (194), FACTR61, ECCCUR (1951, FACTR7)
                                                                                    FV It.
        FOUTVAL FROE
                                                                                    TV IL
                                                                                           10
      1000CUR(225), HWBAR ), 100CUR(2644), TW(1.11) .
                                                                                    FV IL
                                                                                           20
       2000000026761,900T01,111,100000P127091,MOOT (1,111
                                                                                    EV IL
                                                                                           21
       LOUIVAL ENCE
                                                                                    EV IL
      TENC COURCE 11. JUNDELLE). (NOCC UP (F2) , KRAIGED) . LACCOUP (13) . MAT LINUT
                                                                                    FV IL
                                                                                           23
C
                                                                                    FV IL
                                                                                           24
       COMMON DOCUMANOCCUR
                                                                                    EV IL
                                                                                           25
¢
                                                                                    FV IL
                                                                                           24
C
                                                                                    EV IL
                                                                                           27
C
                                                                                    FV 1L
                                                                                           28
             SUBROUTINE EVIL CALCULATES THE MASS LCSS RATE - MOCT, THE
                                                                                           3°
                                                                                    FV IL
          WALL RECESSION RATE - SOUT, AND THE WALL TEMPERATURE - TW FOR
                                                                                    FV IL
           THE BUDY STATIONS AT WHICH ABROD WAMIG HEATING RATES HERE
                                                                                    EV IL
                                                                                           31
          OSTAINED IN SURPRILITINE AERCDY.
                                                THE METHOD CO CALCULATION
                                                                                    EV IL
                                                                                           32
          IS DEPENDENT ON THE MATERIAL HEING CONSIDERED.
                                                                  FOR LINK IN
                                                                                    EV IL
                                                                                           37
          TURBULEST FLOW ONLY, LTALPHA, TEFLON, AND THE INPUT MATERIAL IN
          LAMBIAN AND TURBULENT FLOW AN ITERATIVE STEADY STATE SULUTION
                                                                                    EV IL
          IS USED. OTHE IN LAMINAR FLCK. CARBON PHENCLIC. AND PHENCLIC
                                                                                    EV 1L
                                                                                    EV IL
                                                                                           36
          NYLON UTILIZE CURVE FITS OF MONT AND SHOT AS A FUNCTION OF
¢
                                                                                    FV II.
                                                                                           37
          CLAD HALL HEATING FROM ACRODY, AND TH AS A FUNCTION OF SOLIT.
                                                                                    EV IL
                                                                                    CV IL
                                                                                           30
                                                                                    EV IL
                                                                                           40
C
            THE STEADY STATE ABLATION METHOD WITCH FREATLY ITERATIVE
                                                                                    EV IL
          SOLUTIONS OF SIMULTAMEOUS FOLATIONS FOR THE SURFACE TEMPERATUREEVIL
                                                                                           42
          AND THE HALL RECESSION RATE. IT INCLUDES THE FOLLWING CONSIDERATIONS - CUNVECTIVE ENERGY. CONDUCTION FLUX. AND
                                              IT INCLUDES THE FOLLOWING ENERGY BY TL
                                                                                           43
C
                                                                                    FY IL
          SURFACE RADIATION LOSS, AND SURLIMATION ENERGY.
                                                                                    FV IL
                                                                                           45
       ゴーリントのにむ
                                                                                    TY IL
                                                                                           46
       KINKK HULD
                                                                                           47
                                                                                    FV IL
       1COUNT * C
                                                                                    FY IL
                                                                                           48
       IFIU WE . 21GD TO 12
                                                                                    FY IL
                                                                                           49
       THE TAK SHTWE PARS
                                                                                    EV IL
                                                                                           电路
       THI 4, I FETHICZ, 18
                                                                                    FV II.
                                                                                           51
   12 COUNT INDE
                                                                                    FV IL
                                                                                           与意
       IFCHATUMO .LT. 3160 TO 14
                                                                                    EV IL
                                                                                           54
       ITTHATENDIARD AND TO 52
                                                                                   EV IL
                                                                                           54
       IFIPATING.GE.EIGO TO 14
                                                                                    EV IL.
                                                                                           55
       IFIX OF ATRICO TO 52
                                                                                    FV IL
                                                                                           56
   14 COLT INUE
                                                                                   FV IL
                                                                                           57
      ZZuTulj,K3
                                                                                   FV IL
                                                                                           明确
      CS#0.00 SHE#THIJ.KIR250CC.DC/THIJ.KF
                                                                                   FV IL
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1 1COUNT'= ICOUNT&1 TEM= CLOG(BETA2*ZZ**BETA3}-BETA4/ZZ SPC=BETA1*ZZGEXP(TEM)	E1	V IL V IL V IL		60 61 62
TK 1= FACTR 2-1.111205/22	at temperatur simpler Printer -	V IL	F STOR	63
K1=+XP(TK1)		V II.		64
PBAR #PS/2117.DO	I Me I	V IL		55
1 (F(K1.LT.(1.0D-36))K1=C.CD0		v IL		66
K7=SURT(12.7657DC*K1*K164.D0*K1*2.9984DD*(K164.D0*PBAR)*(FACTR		V IL		67
		V IL	-	6P
K2=K2-12.7657D0*K1	esperante marine in			69°
K2=1).5DC+K2/(K164.fDC+PBAR)		V II		
GAM 1=13.654008469.5850 C*K2	4 10 40	V IL		70
CAM 2=0.256012008 C.5558D-2*K2		V IL	-	71
GAM 3=0 . 53450- 5- 0. 4270- 6*K2		V II		72
HWBAR = CAM 1622* (GAP 26GAM 3*77)		V IL		73
HWBAR = HRBAR /33.86DC	F	V IL		74
E1BAR =HRBAR/35. ESDC	F	v II		75
HWHAR = HHBAR / 33.86DC E1BAR = HHBAR / 35. E5DC XCUM = 0.349DC*HSR TC E2BAR = (XCOM&C.5DC*HWBAR) / (XCOM&I7.945DO) E3BAR = 0.95DC = (HWBAR - HREF) / HSR TO 1F(JJHOLD.EQ.2)GU TO 2	E	V II	•	76
E28AR=(XCOM&C.59C*HWBAR)/(XCOM&I7.945DO)		V IL		77
E BBAR=0.95D(-(NWBAR-HREF)/H SR TO	<b>'</b> E	V It		78
1F(JJHOLD, FQ. 2) GU TO 2	f	v II		79
[H(JJHOLD.CE.3)GD TO 3	F	V II		80
TH(JJHOLD.CE.3)GO TO 3 F1=-C.C370G	F	V IL		81
E2=U.nG		v II		82
a part of the part	e eller France ver	v II	-	83
G() TO 4		v ii		94
2 (1=0 d0	Market de la company	v II	,	85
£2=-0.185DC		V II		36
CO TO 4	Section (III)			30 37
3 E1=0.00		V II		
E2=+0.502DC	100000F 100	V II	. ,	88
4 QDGT DF=QDGT(JJHOLD+KKHOLD)+(E1BAR++E1)+(E2BAR++E2)		VI		99
IETOCOTOF LE.O. COCIGO TO 77		V 11	191	90
TEM#22+TINIT		V II	-	91
IFUZ LGE .ZTR )FBAR = SPD+H S*FAC TR 6/3DQTCF	-	-V 11	1 144	92
INIZ LT .ZTR ) FRAR = SPD H S*FAC TR 7 / DOTOF		V II		03
PHIN+EXP(-FRAR+(1.Du&C.618DO+FBAR))		VI		94
######################################	F	EV II	L	95
i goote-grotef-Fanar-PHIS		V	L.	96
IF CMATENULED SIGO TO 55	•	FV I	L	97
GENTS=SPD#RH02#F	f	V II	Ļ	98
LBAR #SP C# LTFM#FAC IR 46FAC TR 5)	F	V I	L	99
RBAR -QENTC-ONNTT-9001S		EV I	L	100
ARCU-L BAR-RBAR	***************************************	V I	L	101
51 CONTINUE		EV 1	L	102
ITCHCTUNT.CT. 100 XCG TO 50	e decree is the S	FV I	H	103
5 IFCDARS(AR GUILT.1. ODCIGO TO 50			- 100	104
S IPUDANS (AR GUT LT . DAN SIC. CID C+LBAR) IGO TO 50		FV I		195
THE ANGENIAN OF A STATE OF A STAT				106
7 1F(APQU) 8.5G.9 6 1F(US) 11.5Q.10		EV I		107
TO THE STATE OF THE PART THE AT		FV I		108
e trops 110, 50, 11 ti cs0,500=05		FV I	- 100	109
11 CS1.500*0S		EV 1	-	110
10 ZZ=ZZQDS	*   NOTE   NOTE   1	EV I	1	111
		FV I		112
SC ZZ=NMAX1CZZ.O.ODO1 77 IFCUDUTCF.CF.G.UDC)SPD=C.ODO		EV I	-	113
77 IFILIDITUE .LF .U. UDC) SPD=C.ODO				
SPD=RMAXI(SPD.C.CDD) (1001T(Ji-K)=SPD=(RHDZEDELRHD)	and a special participant to	CV I	le.	114
(IOVIT (J.K.) = SPO* (RHOZEDELRHD)		rv !		117
METURN	Manager 1 to 2 to	V		110
			-	
C and the last time to the first to the			-	118
TO SA STATE OF THE PROPERTY OF THE SAME STATE OF		rv 1	1	119

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EV IL
C
                                                                                     120
            OTHE CALCULATIONS FOR LAMINAR FLOW
       QENT CW #QONT(JJHOLD, KKHDLD)
                                                                                FV IL
                                                                                     122
       IFFOCATOW-LT-1-701160 TO 56
                                                                                EV IL
                                                                                     123
       IFCODITOW-LT-1.56011Gh In SP
                                                                                EV IL
       IFTQUOTCW-LT.2.5(D2)GO TO 59
                                                                                EV IL
                                                                                     1.25
       TREUDITOWALTARAGORIGO TO 62
                                                                                TV IL
                                                                                      1.24
       MDDT(J,K]=0D0TCN#(1.CDC-1.503/HS)/(3.6403 68.100 *HS ATO)
                                                                                EV IL
                                                                                      127
                                                                                FV IL
    62 MOUT(J,K)=-1.056500250-367.611185990-5*09CTCW63.342517000-8*CCUFCWFV IL
      1**?~ 6.91682422D~ 12*QDA TC W**3
                                                                                fv tt
                                                                                     130
       CG TO 57
                                                                                EV IL
                                                                                     131
    SE MODITUAKIEC.ODG
                                                                                FV II
                                                                                      132
       CO TO 57
                                                                                FV IL
                                                                                     133
    56 MOUT(J.K)=0.666210666.6661500*(000TCh-13.000)
                                                                                FV IL
                                                                                     174
                                                                                FV IL
                                                                                     135
    59 MONT(J,K)=-1.27424335D-361.36071670D-4*000TCW-1.093915160-0*QDUTCWEVIL
                                                                                     136
      1**7&7.98275747D- 9*QUOTC W** 3-1.652105790-11*QDOTCW**4
                                                                                     137
                                                                                FV IL
    57 MOTHREMONTIJ,KI
                                                                                FV IL
                                                                                     138
       IF(000TCW-LT-1-003)G0 TO 75
                                                                                EV IL
                                                                                     179
       IF (000)TCW.LT.3.003)G0 TO 72
                                                                                FV IL
                                                                                     140
       SPD#MOTWR/(PHO2EDFLRHO)
                                                                               FV II.
                                                                                     141
       CO TO 73
                                                                                EV IL
                                                                                     142
    75 SPD=1.61150-64000 TCW-5.237410-4
                                                                                FV IL
                                                                                     143
       CO TO 73
                                                                                FV IL
                                                                                     144
    72 SPD=-1.111967600-464.C33767190-7*QDDTCW69.701312510-10*CDUTCW++2-
                                                                               FV IL
                                                                                     145
      12.455275040-13*QDOTCW##3
                                                                                FV II
                                                                                     146
    73 IF(SPO A T. 1.CD-13) SPD =1.CD-13
                                                                                FV IL
                                                                                     147
       SUTWR=SPD
                                                                                FV IL
                                                                                     149
       IFCHATLNO.EO.4)GO TO 53
                                                                                EV IL
                                                                                     49
       SPOL =OLDGIGESPOI
                                                                                EV IL
                                                                                     150
       1F(SPOL.LT -- 1.2583011 SPOL =-12.58300
                                                                                EV IL
                                                                                     151
      _ZZZ=6.346345120365.5C628796D2#SPDLG1.96585366D1#SPDL##2
                                                                                FV IL
                                                                                     152
       1F122.GT.4.85U3122=485C.CDG
                                                                                FV IL
                                                                                     153
                                                                                FV II.
                                                                                     154
, ¢
                                                                                PV II
                                                                                     155
C
            PHENOLIC NYLON CALCULATIONS
                                                                                EV IL
                                                                                     156
    53 CONTINUE
                                                                                FV IL 157
       QUOT CW=QDOT(JJHOLD,KKHOLD)
                                                                                FV II
                                                                                     158
       QUOTCH = DMAX1(QUOTCW, C. COC)
                                                                                EV IL
                                                                                     159
       IFTQEOTCH.LF.1.UD21GO TO 60
                                                                                FV IL
                                                                                     160
       IFIQCOTCW.GT.3.CD3)GO TO 74
                                                                                EV IL 161
       MDOT(J,K)=-1.623676470-361.78922793D-4*QDCTCW61.32113696D-6*
                                                                                EV IL 162
      1QUUT CW**2-5. C8747513D-12*QDOTC W**3
                                                                                EV IL 163
       GU TO 61
                                                                                    164
                                                                                FV IL
    60 MOGT (J.K)=10.000++(-2.522889667.37599-3*QOCTCW)
                                                                               EV 11.
                                                                                     165
       CO TO 61
                                                                                EV IL 166
    74 MOUT(J,K)=QDOTCW*(1.CDG-1.703/HS)/(1.8450381.1101*HSRTU)
                                                                                FV IL 167
    61 CONTINUE.
                                                                               EV IL
                                                                                     169
       1F(MODT(J,K).LT.1.CD-4)MODT(J,K)=0.000
                                                                                EV 1L 169
       IF ( MOTWO .L T. 1. OD- 5) MOTWR #1. 00-5
                                                                                FV IL 170
C
            PHENOLIC NYLON SDOT I'S RATTUFD FROM CTHE SOCT
                                                                               FV II.
                                                                                     171
       SPU=(SOTHR*MOOT(J.K))/MOTHR
                                                                                FV IL 172
       1F(SPD+LT+1+00-5)SPO=1+00-5
                                                                                EV IL 173
       SPOL =OLOGIC: SPO )
                                                                                EV IL 174
                                                                               FV II. 175
       16(SPD+LT+1+CD+4)GO TO 76
       Z7=6.944746350366.4536717602*SPUL-1,4856917308 SAGL4-2
IF(ZZ.GT.44.85103)ZZ=4856.003
                                                                               FV IL
                                                                             FEV IL - 1875
       RETURN
                                                                                EVIL 178
    76 ZZ=250.00061756.000*(SPO145.000)
                                                                                FV II 179
```

	t .	TO CONTRACT AND ADDRESS OF THE PARTY OF THE	EV IL		BI
	b de	CARDON DUCKINI IC / ALCONATIONS FOR LAMIA OF SICH			182
,	i or eller	CARBON PHENOLIC CALCULATIONS FOR LAMINAR FLCW	TV IL		1 -
					183
	es lives on the	QCUTCH=QDOT(JJHOLD,KKHOLO)	LA T		184
		TERROTOWALTAR CORRECT TO 64	EV IL		185
		1F(2CUTCN,LT.1.13D1)GO TO 65	EV IL		IRA
		1F(QDJTCW.LT.2.3101)GO 10 66	FV II		187
100	14 - 1 4-44 F	IF1000TCW.LE.1.0031G0 TO 67	EV IL	419	198
		MUST (J.K.)=1.23244CC2D-263.3CR58843D-5+QDOTCW64.60267808D-9+CCOTCA			
- 100 100	4 - 1-1 <del>0</del> 10-00100	• ?	FV IL	· ~ ·	- 19
		CU TO 66	EV IL		
	. 64	SDUT(J,K)=C.CDO	FV IL		
		CO TO 69		,	193
	6.5	MOUT (J.K 1=6.57880-4-1.557730-4+400TCHE9.14850-6+CDCTCW++2	FV II		
		Q1) TU 69	TV II		
i ile i	. 66	Shot (J.K)=1.10-465.76C220-5*(ODCTCW-1.13D1)	EA II		
	44	CJ TU 68	EV IL	. ]	197
п		MOOT (J.K) =- 1.730432550-361.259657660-4+00 CTCW-8.569390 320-8+CCUTC			198
		**?& 4.655483120-12*Q001C h**3	LA II	- '	199
40 6	b fl	CONTINUE	FV 11		sou.
		IF CONSTONALT + 2 + 4 TD 1 ) SPD = 1 + CD+1 H	- FV II		50.1
h : *	The Williams	IFTOCOTCH.LT.7.47011GO TO 65	FV 11		505
		THEORNICH LT. 2.75P 2160 TO 70	EA II		2013
-	one alim i	IFTURDTCW.LT.1.(03)GO TO 71	FV IL	11	20 4
		\$P!! - 3. 1964840- 463.8650-7+00016 62.1717920-10+0007 CW+2	EV II		205
h	and the	CO TO 65	FV It		50.6
	70	SPUN-2.122925590-661.189559510-7+9007CW61.400987060-10 +COUTCH++2			277
-1	1.7	GI) TO 64	EV 11		908
		SPD=7.4675732LD-5-4.55C33115D-7+QDDTCH61.55581653D-9+QCCCCH++2	EV II	- '	SD 0
1	tel and the same	1-0.4421539CD-13+QIX1TC W++3	FV 11		STU
	1000 111	COUT MUE	EA II		
	4.1	SPIL =DLOGICE SPD 1	_FV II		1.1
1	18 His 11	2/2 = 0.667411340384.4543184502 * SPOL 61.20991 A2301 *S POL **2	EA II		713
100	1	HATTA AND STORESTON	CALI	100	
10		METURN	FV II		
	C		EA II		
	C	CARBON PHENOLIC CALCULATIONS FOR TURBULENT FLOW	EA II		
della.	55	A Print of the Control of the Contro	1 7 84		
		TO CHILLING COURT CHILD COURT TO THE COURT OF THE COURT O	FV II		
ne it		ABOR #C22+( elec.cnc-tko)&f	LA II		5.50
		HOME HOST	FV II		221
		USTAR *APAR CBBAK * MSR TO	EA II		555
		MOUTILIJK D*ODNE TZQ STAR	FV II	- '	223
		IFF CN TT.LT.C. CDC IMDOTIJ.K) *C. no3	LA II		
		SKAMA AND SANDON A TAKE I EXHIBIT	EVI		225
	Dill Ful	IFISPO.LE. 1. CO-1C   SPD - 1. CO-10	FY II		276
		Philodelia part	SA U		727
	1 14	1F(SPOL_LT1.905ED1) SPOL == 18.05800	FY II		238
		47 40 46 H741 1340 36 4.40431 8450 2+ SPOL 61 .20901 62 301 +5 POL +2	LA II		229
	THE PARTY	THE PROPERTY OF THE STATE OF TH	FV 11		770
		LNO.	FY I	L	231
	CONTRACTOR OF THE	101101 A. J. KRISTON C. T. S. C.			



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CHON
                                                                                 FCN
        SUMPOUT INE FOR ING . F . X . MIN " "
          IMPLICIT PEAL+P (A-H, M-J)
                                                                                 FON
       COMMON /CICCUR/ TOCCUR(320)
COMMON/MEKI/ISOIS), MS, ISOI(A)
                                                                                 FCH
                                                                                 FCN
        COMMON JENDY ITERM
                                                                                 FCN
        COMMON / DOP T/DEL X 1201
                                                                                 FON
       COMMON DCCUP, NOCCUR
                                                                                 FCN
                                                                                        'n
        DIMENSION X(40) (G(40) FO(40)
                                                                                        n
                                                                                 FUN
        DIMENSION POGUP (ACCOL, NOCCUPISA)
                                                                                 FIN
       DIMENSION TOP (26) NPLOT(5) NPSA VE (14)
                                                                                 FCN
       FOUTVALENCE [NDCC LR (14), MPRINT), (NDCCUR (24), NPLOT (1))
                                                                                 FIN
                                                                                        12
        COUTVALENCE (INCOUNTABLE) 10P
                                                                                 FUN
                                                                                        13
 C
                                                                                 FIN
 ¢.
                                                                                 FCN
                                                                                        15
 Ç
             SUPPOUT THE FOR PUST COMPUTE THE FUNCTION F AND THE GRADIENT
                                                                                 FON
                                                                                        16
          VECTOR C LISTA, THE VECTOR MATTER FLEMENTS ARE THE FIRST PARTIAL DEPLYATIVES OF E WITH RESPECT TO THE PARAMETERS ).
 ¢
                                                                                FIN
                                                                                        17
                                                                                 FON
                                                                                        18
           GIVEN THE N COURDINATES OF THE PCINT X.
                                                                                        10
                                                                                 FCN
 C
                                                                                 FCN
                                                                                        20
 C
                                                                                 FCN
                                                                                        21
       00 416 1 = 1, 6
                                                                                 FCN
                                                                                        27
       NPSAVELLE # IDP116631
                                                                                 FCN
                                                                                        23
        IFCI .LT. 61NP SAVE (166) *NPLMT(1)
                                                                                 FCN
                                                                                        24
        TECT ALT + 4)NP SAVE (1611) = 10P(1)
 416
                                                                                        25
                                                                                 FICH
 C
                                                                                       26
                                                                                 E CN
        IF(M1.NE.3) GO TO 5
                                                                                 FCN
                                                                                        27
 C
                                                                                       29
20
                                                                                 FCN
       NPRINT # 1
                                                                                 FCN
       CALL FEVINAX, F1
                                                                                 FCN
                                                                                        30
       MPRINT # A
                                                                                        11
                                                                                 FCN
       60°T0 "104""""
                                                                                 FCN
                                                                                        32
 C
                                                                                 FCN
                                                                                        37
   5
       CALL FEVILIAN, FT
                                                                                 FCM
                                                                                        44
        IFLITEPM NE . 01 GO TO 106
                                                                                 FCN
                                                                                        15
 ¢
                                                                                 ECN
                                                                                        36
       CO 417 1 = 1,
                                                                                        77
                                                                                 FCN
        TOP ( 16 63) '* Q
                                                                                 FCN
                                                                                        ЯÞ
        IFIT .LT. 6) NPLOT(1) = C
                                                                                 FCN
                                                                                        39
 417
        IFI 1 .L T . 4) [ 10 P ( 1 ) = C"
                                                                                 FCN
                                                                                       40
       CC 105 T=1.N
                                                                                       41
                                                                                 FCN
       IIIXJJJJJIIIXEIIIX
                                                                                 FCN
                                                                                        42
       CALL FEVIN. X. FM)
IFFITCHM.NF.0) GO TO 106
                                                                                 FCN
       C(1) = (FM -F)/PELX(I)
                                                                                 FCN
                                                                                       44
                                                                                 FCN
                                                                                       45
                                                                                 FCN
                                                                                       46
   105 CONTINUE
                                                                                 FCN
                                                                                       47
. c
                                                                                 FCN
                                                                                       48
 106
       CO 418 1 - 1. 6
                                                                                 FCN
                                                                                        40
       IDEC 16 631 "* NE SAVECTE
                                                                                 FCN
                                                                                        50
        IFIT ... I NPLOTITI .. NPSA VECTEAT
                                                                                 TCN
                                                                                        51
              IFIT.LT.4) INPITE " NPSAVETIETTE
 418
                                                                         FCN
 C
                                                                                 FCN
                                                                                        53
                                                                                       54
        FICH
        IRC=1
                                                                                 FCN
        10 = 1
                                                                                 FCN
                                                                                        56
  1000 WRITE(6, 915) IC. MS . F. [X[1], [=1,N]
                                                                                       57
                                                                                 FCN
 ¢
                                                                                 FCN
                                                                                        50
   915 FORMATEIN /10x. PRINT FONT, 5x, PRASSTITE, 5x, PANDEM STEPT, 15:5%
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owners provide design of the fill will make some

the more s

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CREV
                                                                                                                                                                      F EV
              SUBROUTINE FEVORTX. VALL
                   IMPLICIT REAL+8 (A-H,O-Z)
                                                                                                                                                                      FFV
              COMMON VIDNOSV IDI(50), ID2(50)
                                                                                                                                                                      FFV
              COMMON DECEUR, MOCCUR
                                                                                                                                                                      FEV
              COMMON/IDPT/IPRUC, IN. NCONS, IPMT, IEX, LI MIT, IRAND
                                                                                                                                                                      FFV
              COMMON/MIN/ALOW(201, UP(20), AMULT(20), CALOW(20), CUP(20)
                                                                                                                                                                      FFY
               COMMONACCEMAD
                                                                                                                                                                       FTV
               COMMON VIXCOMY XCOM(200), (COM(200)
                                                                                                                                                                                    10
                                                                                                                                                                      FFV
               COMMONIZENDIZITERM
                                                                                                                                                                       FFV
               DIMENSION X(20), PMLTY(20)
                                                                                                                                                                       FEV
               DIMENSION DECURTACEDI. NOCC LP (30)
                                                                                                                                                                       FFV
               EQUIVAL ENCELOCCUP (40001+LP)
                                                                                                                                                                       FEV
                                                                                                                                                                                    14
               FQUIVALENCE (NPCCUR(14) + NPPIMT)
                                                                                                                                                                       FFV
                                                                                                                                                                                    15
                           SUBROUTINE FEV EVALUATES THE PENALTY FUNCTION WHICH IS BEING FFV
                                                                                                                                                                                    17
 C
                     OPTIMIZED FOR THE POINT DESCRIBED BY THE N VALUES OF THE X
                                                                                                                                                                       FEV
                                                                                                                                                                                    18
  C
                                                                                                                                                                       FTV
 (
                                                                                                                                                                                    71
                                                                                                                                                                       FFV
  C
                                                                                                                                                                                    22
                TT SAM ≠ O
                                                                                                                                                                       FEV
                                                                                                                                                                                    27
               VAL # 0.000
                                                                                                                                                                       FEV
                                                                                                                                                                                    74
  ¢
               00 10 I=1.N
                                                                                                                                                                       FFV
                                                                                                                                                                                    26
                17 = TO 1( T)
                                                                                                                                                                       FFV
                                                                                                                                                                                    27
               OCCURCIZI=X(I)
                                                                                                                                                                       FEV
                                                                                                                                                                                    .28
         10 CONTINUE
                                                                                                                                                                       FFV
                                                                                                                                                                                     20
  C,
                                                                                                                                                                       FFV
                                                                                                                                                                                     30
                IFE (COME 1) .NE . 1) GO TO 15
               CALL CLASSCIVAL)
                                                                                                                                                                                     31
                                                                                                                                                                       FFV
                                                                                                                                                                                     32
               GO TO 22
                                                                                                                                                                       FFV
                                                                                                                                                                                     37
  C
                                                                                                                                                                       FEV
  15
                CALL SCREEN(N.X. ISUC. VAL.D)
                                                                                                                                                                       FEV
                                                                                                                                                                                     15
                IF( ISUC .LT. 0) GO TO 100
                                                                                                                                                                       FEV
  ¢
                                                                                                                                                                                     17
                                                                                                                                                                        FEV
   ¢
                                                                                                                                                             FFV
              "CALL FIZTIVALT"
                                                                                                                                                                       FFY
                                                                                                                                                                                     10
  C
                                                                                                                                                                  FEV
   C
                GO TO 100
                                                                    Management of companies to constitute that is not a constitute to the constitute of 
         20 CALL MISC (N.X.VAL)
                                                                                                                                                                       FFV
                                                                                                                                                                       FFV
                                                                                                                                                                       FEV
   C
                                                                                                                                                                 FFV
. C
                                                                                                                                                                        FFV
       22 TECNEONS.FO.DIGH IN TCC
                                                                                                                                                                        FFV
                                                                                                                                                                                     50
                                                                                                                                                                        FFV
                                                                                                                                                                                      51
                WR 1TFL 6, 1000)
                FREMATETHAT IZ *4X *LOKER BOLNO *4X *UPPER & CUND *6X * OCCUPETZ F 8X
                                                                                                                                                                        FEV
                                                                                                                                                                        FFV
              1 P FN AL TY 1
                                                                                                                                                                        FTV
   ¢,
   Ç
             * CC 50 Tel.NCONS
                                                                                                                                                                        FFV
                                                                                                                                                                        FFV
                                                                                                                                                                                      57
                PNLTYLLI * C.COC
                                                                                                                                                                                      50
                 17 * 192(1)
                 IFC.ECORCIZI.GT.GALOW(II) GO TO 25
```

	PNLTY(1) * AMULT(1)+0ABS(OCCUR(12)-CALOW(11)++1EX	F.EA	- 60
	WRITE(6, 1160)   IZ.CALOW(I).CLP(I).OCCUR(IZ).PNLTY(I)	FFV	61
	co to so	FFV	62
25	1F(3CCUP(12).LT.CUP(1)) OD TO 27	FTV	63
	PNL TY( 1) * ANUL T(11*DABS(OCCUP(12)-CUP(1))**1EX	FEV	64
27	WRITE(6, 1100) 17, CALOW(1), CUP(1), OC CUP(12), PALTY(1)	FFV	65
1100	FURMATE 111 14. 1P4F15.7)	EEA	66
50	VAL: = VAL & PNETY(1)	FFV	67
C	المراب المحمد ومسهدات	FFV	68
C		FFV	69
	C = VAL	FFV	70
	IFIVAL.GT.C.ODOIGO TO LOC	FFV	71
	IT FR4= -1	FFV	7.2
С		FEV	73
100	CONTINUE	FTV	74
	WRITE(6, 900) VAL, (X(1), I=1,N)	FFV	75
C		LEA	76
900	FORMAT(1H **CEV* *2X*C =*1PE15.7.* X =*5E15.7/(1H 29X1P5E15.7))	FFV	77
999	RETURN	FFV	78
	END	FEV	79

1-616

CFI	in L		F1B1	7
		IMPLICIT REAL * 8 (A-H+O-Z)	FIRI	2
		SUBROUTINE FIB! (AA, RB, NF, NMIMAX, ACCUR, NEUNC, XMIMAX, YFIMAX)	FIRE	7
С		•	FIRT	4
C			FIBL	5
C.		SUBROUTINE FIB1 UTILIZES A FTBONACCI SEARCH TECHNIQUE TO	FIB1	6
C		FIND THE MAXIMUM OR MINIMUM OF A ONE VARIABLE UNIMODAL	FINI	7
C .		FUNCTION WITHIN A DEFINED REGION (AA.BB).	TF 181	В
C			F131	ŋ
C			F131	10
		₩=6	F181	11
		CIMENSION E(4C)	FIB1	12
		ITERM = 0	FIRT	13
		Λ= ΛΛ	FIRE	14
		भ= पुर्व	F191	15
		IF (NM IMAX) 10.11.11	FIRT	16
	10	J4 [MAX = ]	F181	17
	-	CO TO 20	FIRE	19
	11			į o
0.00		JM 14AX = 2 IF (R-A) 21, 22, 23	FIRE	20
		TEMP = A	F131	21
		Λ= β	FIRE	22
		R=TFMP	FIRE	23
		(I) TO 23	FIBT	24
	22	1 = 1	FIRE	25
*	25	WRITE (1W, 26)	FIRE	26
		FORMAT(17HC ERKOR OF TYPE 12)	FIRT	27
	. •	ITERM = 1	FIRE	-29
		CO TO 170	F131	20
	23	P=9-A	FIRE	31
		11 (NEUNC) 31,30,35	F131	31
74 Y	30		FIRT	32
		L = ?	FIRE	33
	•	CO TO 25	FIRI	34
	35	NFUN C2=NFUNC & 2	FINI	35
		P1=(1.000ESQRT (5.00C))/2.00C	FINI	36
		R 2=(1.000-SQRT (5.00())/2.000	FIRE	37
		ROACC=[R]**NFUNC2-R2**NFUNC?]/(R]-R?]	FIRE	30
		GD TO 45	FINI	20
	40	PDACC=9/4CCUR	FIRE	1
		1F (ROACC-2.000) 50.50.51	FIRE	41
		XM IN AX = ( AER ) / 2. ODC	FIRE	42
		MAR PARK W PAINT RE WALTARE W ANT R	F181	43
-	•		FINT	44
	51	15 100150 0 0051 10 10 10	FIBT	45
			FIRT	46
	•	XR=A62.000+(B-A1/3.00C	FTRI	47
		YL = FUNIXL,NF)	FIBL	48
		ITI LTERM NE . DI GO TO 160	F181	49
		YR = FUNITARIANE	-F191	50
		IE(ITERM_NC_0) GO TO 150	FIBL	51
		IF(YL-YR) 70.70.71	FIRE	52
	70	XM IM AX = XR	FIRT	59
		AN IN VX = AB	FINE	54
		CO TO 170	rini	55
	71	XM MAX = XL	FIBL	56
		Y4 I4 VX = AF	F131	57
		GD TO 170	FIRT	58
		40. 417 1.63	J (17) 1	70

	E(1) = 1.000	FINI	60
	E(2)=1.000	FIBI	61
74	F(K)=E(K+1)GE(K+2)	F131	62
	IF (RDACC-E(K)) 8C. 8C. 75	FIRI	63
	1F (K-4G) 77,76,76	FIRE	64
76	L=3	FIRI	65
	GO TO 25	FIRI	36
77	K=K&1	FIRE	67
	GO TO 74	FIRE	68.
80	N=K	FIR1	69
	XL = A&E(N-2)*R /F(N)	FIRE	70
	XR=AGE(N-1)*R/F(N)	F131	71
	YL = FUNI(XL,NF)	r 181	72
	IFI ITERM .NF .O) GO TO 160	FIR1	73
1.4	YR = FUNI(XR+NF)	FIN1	74
	16(1TCRM •NE • 0) GO TO 150	F (81	75
•	J=1	FIRI	76
90	1 – N – J	FIBL	77
	NJ/INF=M-J-1	F 191	78
	NJ TWO = N - J - 2	FIRT	79
en la l	CO TO [190.101]. UMIMAX	FI31	ŔΠ
100	IF (YR-YL) 130,13C,11C	FIRE	81
	IF (YR-YL) 110,110,130	FIB1	8.2
110	1F (J-NE 3) 120,160,160	. FIRT	83
	N=XR	F181	84
	A = A	F181	8.5
- 4	Range A	FIB1	86
	XP =XL	FIRE	87
	XL=A&E(NJTWO)*R/E(NJ)	F131	.88
	YR=YL .	. FIB1	89
	YL = FUNI(XL.NF)	FIBL	9r
	IFI ITERM . MF . 7) GO TO 160	ribi	91
125	J=J61	FIBL	92
	GO TO 90	FIR1	93
130		FIRI	94
	R#B	F181	95
	A≠XL	F 131	96
47.75	P = B + A	F 181	97
81 5	XL =XR - > e conte   s   c   c   c   c   c   c   c   c   c	FIB1	98
h 11.	THE REPORT OF THE PROPERTY SHAPE OF THE P. S.	FIB1	0.9
with d	XK # U F F I M THE TAKE THE TOTAL THE TAKE THE T	FIB1	100
#13m	THE PARTY OF THE P	F191	10.1
Fill other	IN ITERM .NE .01 GO TO 15C	F191	
1.1.17	CD TO 12:	F191	193
1 40	XM IN AX *XR	- FIB1	104
	YM IM AX * YR	FIBL	_
	CO TO 170	F181	
160	XM IMAX =XL	FIRI	
1 1 7/1	YSTMAX=YE IIII	FIRE	
170	RETURN	FIRE	-
* 4 6			

```
CFIRE
                                                                    FTDE
      SUPPRIORINE FIRE TO THE TOTAL
                                                                    ngan
        IMPLICAT REAL * P (A-H.O-Z)
      COMMON/BEKO/ HE 46,401, XE401, GE40), 5 (40), XP(40), GP (40), E (40), GB(40) FIRE
     1. GS. GSP. GTP.GSS. GTT. GSR.F.FP.FR.FO.E. P.TO.RS.SL. Z.Q.A.EL.
                                                                    广门股票
     PEELTA, FAC, C140, 101
                                                                    FIOR
      COMMON / BLK T/MINIL + LS+M1 + MS+NS+TT+K+NC
                                                                    FIRE
      COMMON /FND/ ITFOM
                                                                    FIRE
C
                                                                    FINE
                                                                          Q
C
                                                                    From
                                                                         10
           SURROUTINE FIRE, PART OF THE DAVIDON MINIMIZATION CALCULAS
C
                                                                    FIRE
                                                                         1.2
        TIONS, EVALUATES THE PENALTY FUNCTION AND ITS GRADIENT AT THE
                                                                    FIRE
                                                                         12
         INTERPOLATED PUINT AND DETERMINES IF THE LOCAL MINIMUM HAS BEEN FIRE
                                                                         12
        SUFFICIENTLY WELL LOCATED. IF SO, THE PATE OF CHANGE OF THE
         GRADIENT IS EVALUATED BY INTERPOLATING FROM ITS VALUES AT THE
                                                                    FIRE
                                                                         15
        END POINTS OF THE INTERVAL BEING CONSIDERFO AND ITS VALUE AT
                                                                    FIRE
        THE INTERPOLATED POINT.
                                                                   PIPP
                                                                         17
¢
                                                                    FIRE
                                                                    FIDE
                                                                         10
  400 M1=2 "
                                                                    F 19 #
  401 CALL FOR IN . GR . FR . T. MIT
                                                                    CIMP
                                                                         21
      IF(ITEMM.EQ.D) GO TO 402
                                                                    FIRE
Ċ
                                                                    FIOF
      ro 10 1 = 1.N
                                                                    TIME
      X(1) = T(1)
10
                                                                    Flor
                                                                         25
      00 TO 412
                                                                    FIRE
                                                                         26
C
                                                                    FIRE
  402 Vm1
                                                                    FIDE
                                                                         .20
  463 CALL MATMP (M.N.S.GH.GSB)
                                                                    FIPE
      TP1= OMINICE.FP1
  TP1= UMINILE, FP1
405 IF LTP1-FRGE141P, 406, 406
                                                                    FIRE
                                                                         30
                                                                    FIDE
                                                                         31
                                                                   FTPF
                                                                         17
  4117 TP 2= ( 1.0-A )/A
                                                                    FTRE
  408 TD=GS8+(TP1-TP2)
                                                                    FTOF
  409 [FIUARS(TC )-0] 413,410,410
                                                                    FIPE
                                                                         15
  410 GSS= 2.0+0
                                                                    FIRE
  411 L=1
                                                                    FIPE
                                                                         17
C
                                                                    FIRE
  412 PETURN
                                                                    FTRF
                                                                         10
C
                                                                    FIRE
  413 GSS=TD62.040
                                                                    F 10 0
                                                                         41
  414 FR 415 I=1.N
                                                                    FIRE
  415 G(1)=(GB(1)-G(1))+TP18(GP(1)-GR(1))+TP2
                                                                    FIRE
                                                                   Flor
  416 L=2
                                                                   FIRE
                                                                         48
  417 GO TO 412
                                                                   FIOF
                                                                         45
  FIRE
 FIPF
 421 FPaFA
                                                                   FIPF
 422 CSP = GSB
                                                                   FIOF
 423 00 425 1=1.N
                                                                   FIRE
 424 XP([]=7(])
                                                                   FIRE
 425 COLID#GB[1]
                                                                   FIRE
                                                                         55
                                                                   FIRE
                                                                         16
 426 L = 7
                                                                   FIPE
                                                                         57
 427 CC TO 412
                                                                   FIRE
                                                                         50
C
                                                                    FIRE
```

420	WG 1T F L & . 2) FL = FL * A F= FH		r tillet pr	) versillete ge	FINE 34 THE -1		FIRE FIRE	60 61 62
432	GS=GSB DD 424 I+1.N X(I)=T(I)	n •	0 0		(1)		e to e e to e	63 64 69
434 435		MOVE LEFT!	illentii ook piik de ja li ir liiti ookkii 190		, Hoper He &	Hills colored a madel with water of	FIPE FIRE FIRE FIRE	ሉሱ ሉፖ 68 ሉባ ጥቦ
			-					
11	INC. IN DOMEST.	a necephero thereon der HHT if	THE TOWN STILL RECOMMENSAGE AND ME HOMANIA	M M N = 11 % = 8 % 10 W	-1 1 PER DEM 11 (44	9H)-#09= ==0 mm	MAG IF9	1.8
	•	343 1 Mr 1	Tr. F	at at				
1 10	। ।। ।। ।। ।। ।। ।। ।। ।। ।। ।। ।। ।। ।	p — φ int liming raket βαν =	TARREST THE SECOND SECO	# 1 () # to FP   F	н be ti	II I II E I E I MAN	К т мотн	F 100 1
	i e		1 10				ir	-14
			4.1		4			
	in the second second	M = 4 4 =1	ren (sabble lage i men entre	- 111 11 <b>1800</b> 00 100 1	4 major in regologoper in en	ा - मुंद्र के क्राइक्ट - मूंग स्थास राजा =	8994 N. H. B. H. H.	F HHILIMI I
								*
			- · · · · · · · · · · · · · · · · · · ·	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		r polit r	: ( · •	
	Garage Care		NF 1 I					
	ork 1 64 h	* F	ा भागम् ॥ असः <del>॥।</del> ॥ ॥ ॥ ॥ ॥ ॥		li (p) i	1 1000 1 1 1		
	100	1 10	р. — ре	I U _t	11 H		•	
	1.00	THE RESIDENCE OF THE STATE	1. At	1 1 9 9 1 1 0	-mpt   Nobel Cabbon	FDD peril sir i i i i i i i i i i i i i i i i i i	101 c e	
	Aprilla ell a company	म् । ज्ञानकारणः । विष्युक्तः । स्थानसम्बद्धाः	भाषात् । व ात् विश्व <del>र्क्त</del> या <del>कार्यक्रमा</del> क्रमा आग्ना गासी स	MI II BHOLD I THE	and the broken	ानंत्रकोती अक्टा को गोक समिन	1.00 to 0 1 1 M	( ) · · · I
			to the food of which				T.	
			1 t 1 t 1 4 (4 H) 10 H)					
li i	11 July 1 1944 10 1941 1949 01 0	Handrian (1 a) parel see tead of the lead	NT (166 40 IN   NII (1664) (611 (641))) Hel	ntend por transfer on pa(en i	ti n perek entr	ni poerodestudi - d i i	રમાત્રા(છ) તેવે ∷ામાં પ્રોલય કે#મ ોન અ	1 (* 68 1 <del>990110</del> )
		official (F)	transfer of the state of the st	ocillac derolden i	1 N H 101	H R H		
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P #

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CTLOVE
                                                                             FLOWE
       SUBROUTINE FLOKE (FNET.BI.IND)
                                                                             FLOWE
       IMPLICIT REAL *8 (A-H.D-7)
                                                                             FLOWE
       COMMON INTROUTA AKK-RHOW-CRHOW-DELWH.
                                                  TABL DHCHEM, RHUSL,
                                                                             FLOWE
         PTG. BCON. ACON. P21.B22.B23. C(149)
                                                                             FLOWE
       COMMON STBLS125 FRM THE (A. LO) . FP AR TH (10) . FRAUTH (H) .
                                                                             FILOW F
          ENTABLIZE, 91.P STAGE (9) . H STABL (25) .
                                                                             FLOWE
          ETABL (12, 11), THTTBL (11), CMCT9L (12).
                                                                             FLOWE
              D(11,5,4),XYZ THL(11,3)
                                                                             FLOWE
       COMMON ZERLINK Z RZ. RN. THE TAC . OB . GAMMAE. COTA . COV A. PECIPU. PU.
                                                                             FLOWE 10
          ANGLEMA, DEPARTU, DIPERA, DIPERA, DIMEA, ULMA, ULMEC, AMPLED.
                                                                             FLOWE 11
          AMARLO, Z. SC., ZRLT
                                                                             FLOWE
                                                                                   1.2
       EQUITAL ENCE TOCCUR (3563) .CCON)
                                                                             FL OW F
                                                                                   13
       CIMENSION MCCURIACON
                                                                             TLOWF 14
       DIMENSION EDUCUPARTS
                                                                             FLOWF 15
      CUMMUM LICCUB . NUCCUB
                                                                             FLOWF 16
       FOOTVAL FROM
                                                                             THOLT
                                                                                   17
         TORO, PROUD, (V, UU)
                                                                             FLOWE 18
C
                                                                             FLOWE IN
C
                                                                             FLOWE 20
C
                                                                             FLOWF 21
            SUBPOUTING FLOWE CALCULATES THE ELECTRON DENSITY TRANSITION.
C
                                                                             FLOWE 22
         N SUM ET (E/CC). AND THE DECAY RATE, DI.
                                                                             FLOWE 23
                                                                             FLOWE 24
                                                                             FLOWF 25
                                                                             FLOWF 26
          INPUT TABLES
                                                                             FLOWE 27
                                                                             FLOWE -28
          ERNITAL . EQUILIBRIUM NORMAL SHOCK ELECTRON DENSITY TABLE
                                                                             FLOWF 29
                   (TABLE F)
                                                                             FLOWE
                                                                                   30
          ERNRTH = 910, DENSITY APGUMENT OF TABLE F (LBM/FT-3)
                                                                             FLOWF
         FRAUTS - VELOCITY ARGUMENT OF TABLE F (1000 FT/SEC)
                                                                             FLOWE 32
                                                                             FLOWF 33
         ENTABL . FOULLIBRIUM FLECTPON DENSITY TABLE (TABLE 8)
                                                                             FICUT 34
C
         MISTABL . HIRTO, ENTHALPY APQUMENT OF TABLE B. ACN-DIMENSIONAL
                                                                             FLOWE
                                                                                   35
         RSTABL = RED /RHOC-DENSITY ARGUMENT OF TABLE B. NON-DIMENSIONAL
¢
                                                                             FLOWF 36
C
                                                                             FLOWE ST
                "TABLE OF MACH NUMBER (TABLE E)
C
                                                                             FLOWE 3P
C.
         EMCTBL - MC. CONE MACH NUMBER-ARGUMENT OF TABLE E
                                                                             FLOWE 30
         THITTEL . THETAC. CONE HALF ANGLE-ARGUMENT OF TARLE E. DEGREES
                                                                             FLOWE 40
                                                                             FLOWF 41
                 * ELECTRON DENSITY AS A FUNCTION OF NORMALIZED ENTHALPY
                                                                             FLOWF 42
                   AND AIR DENSITY FOR 1000 PPM SODIUM SEED (TABLE C)
                                                                             FLOWF 43
         XCTAGL " = RHOVPHOO, "AIR DENSITY ARGUMENT OF TAGLE D. NON-
                                                                             FLOWF 44
r
                   DIMENSIONAL
                                                                             FLOVE 45
         YCTABL "="HARTC, ENTHALPY APGUMENT OF TABLE D. ACK-DIMENSIONAL
                                                                             FLOWF 46
         ZOTAGE . MPAT. THE RATIO OF ABLATED MASS LOSS RATE TO THE MASS
                                                                             FLOWE 47
                "I LOSS PATE IN THE BOUNDARY LAYER, ARGUMENT OF TABLE D
                                                                             FLOWF 4A
                                                                             FLOWF 49
                                                                             FLOWE SO "
                                                                             FLOWF 51
C
                                                                             FLOWF 52
           THE FOLLOWING ARE INPUT QUANTITIES.
                                                                             FLOWF 53
C
                                                                             FLOWE 54
         AKW . MEATSHIELD CONDICTIVITY, (9 TU/FT-HR-DEG. R)
                                                                             FLOWE 55
         AMABLD = MASS ABLATED (LBM/ SEC)
                                                                             FLOWE SA
         AMBLSO . MASS SWALLOWED BY BOUNDARY LAYER (LBM/SEC)
                                                                             FLIMF ST
         ATTIMEC = COME MACH NUMBER
                                                                            FLOWE SA
         ATU # UPSTREAM MACH NUMBER
                                                                             FLOHT SO
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FLOWE 60
                              AMUU = FREE STREAM VISCOSITY (LBM/FT-SEC)
                              BY = SCALE HEIGHT (1, COO FT)
                                                                                                                                                                                                                                                FLOWE 61
                                                                                                                                                                                                                                                FLOWE 62
                              R 21 * SCALING CONSTANT
                                                                                                                                                                                                                                                FLOWF 63
                              822 . SCALING CONSTANT
                                                                                                                                                                                                                                               FLOWE 64
                              B23 = SCALING CONSTANT
                                                                                                                                                                                                                                               FLOWE 65
                              COTA * TOTAL DRAG*ARFA (FT-SQ)
                                                                                                                                                                                                                                                FLOWE 66
                               COVA . VISCOUS DRAGTAREA (FT-SQ)
                              CRHOW * HEATSHIELD SPECIFIC HEAT, (BTU/LB-DEG. R)
                                                                                                                                                                                                                                                FLOWE 67
                                                                                                                                                                                                                      TLOWF 68
                              C(59) * PRESET CONSTANT
                                                                                                                                                                                                                                                FLOWE 69
                               C(60) * PRESET CONSTANT
                                                                                                                                                                                                                                               FLOWE 70
                               C167) . PPE SET CONSTANT
                                                                                                                                                                                                                                                FLOWF 71
                               C(69) = PRESET CONSTANT
                                                                                                                                                                                                                                                FLOWF 72
                               C(A3+93) = PRESET CONSTANTS
                                                                                                                                                                                                                                                 FLOWE 73
                               C(100) # PRESET CONSTANT
               C(115-125) = PEFSET CONSTANTS
                                                                                                                                                                                                                                                FLOWF 74
                                                                                                                                                                                                                                                 FLOWE 75
                               C(130-136) = PRESET CONSTANTS
                                                                                                                                                                                                                                                FLOWF 76
                               C(149) # PRESET CONSTANT
                                                                                                                                                                                                                                               ·FLOWF 77
                    . C(160) # PRESET CONSTANT
                                                                                                                                                                                                                                               FLOWF 78
                               CLICAL = PRESET CONSTANT
                                                                                                                                                                                                                                                FLOWE 79
                                C(165) # PRESET CONSTANT
        C(169) = PPF SFT CONSTANT
                                                                                                                                                                                                                                                 FLOWF AT
                                DB = BASE DIAMETER. (FT)
                               DELWH = HEATSHIELD THICKNESS, (IN)
                                                                                                                                                                                                                                               FLOWE 82
                                                                                                                                                                                                                                            FLOWF 83
                                THE THE TENTE TH
                                                                                                                                                                                                                                                 FLOWE 84
                                GAMMAE = FNTRY ANGLE (FAD)
                                HINEC = CONE ENTHALPY (FT-SO / SEC-SQ)
                                                                                                                                                                                                                                                  FLOWE 85
                                                                                                                                                                                                                            FLOWE 86
          HU . UPSTREAM STATIC ENTHALPY (FT-SO/SEC-50)
                               PICIPU = RATIO OF CONF TO UPSTREAM PRESSURE
PU = UPSTREAM PRESSURE (LO /F 1-59)
                                                                                                                                                                                                                                                  FLOWF 87
                                                                                                                                                                                                                                                 FLOWF .88
                                                                                                                                                                                                                                                  FLOWF 89
                                RHOIC = CONF DENSITY (LRM/ FT-3)
                                                                                                                                                                                                                                                  FLOWF 90
                                RHOSL = SEA LEVEL DEDISTTY (L9M/FT-3)
                                                                                                                                                                                                                                                  FLOWF 91
                                RHOU = UPSTREAM DENSITY (LBM/FT-3)
                                                                                                                                                                                             FLOWF 92
                           RHOW - HEATSHIFLD DENSITY, (LAM/FT-3)
                                                                                                                                                                                                                                                  FLOWE 93
                               RM = NOSE KADIUS (FT)
                                                                                                                                                                                                                                                  FLOWF 94
                                  RTO = PEFERENCE ENTHALPY IFT-SQ/SEC-SQ)
                                                                                                                                                                                                                                                  FLOWF 95
                                 SC = LENGTH OF CONICAL FRUSTLM (FT)
                           TABL # ARLATION TEMPERATURE OF HEATSHIELD (DEG. K)
                                                                                                                                                                                                                                                  FLOWE 96
                                                                                                                                                                                                                                                  FLOWF 97
                            THETAC = CONF ANGLE (RAD)
UNFC = CONE VELOCITY (1000 FT/SEC)
                                                                                                                                                                                                      FLOWF 98
                             . DU . . UPSTREAM VELOCITY . (1000 FT/SEC)
                                                                                                                                                                                                                                                  PLOWF 19
                             Z = ALTITUDE II. OCC F TI
                                                                                                                                                                                                                                                  FL OW F 100
                                                                                                                                                                                                                                                   FLOWF 101
                                 POLT . RIUNDARY LAYER TRANSITION ALTITUDE (1,000 FT)
                                                                                                                                                                                                                                                   FL 08 F 10 2
    C
                                                                                                                                                                                                                                                   FL OW F 193
           PT = 3.141592654 FLONE 104
                                                                                                                                                                                                                                                   FLOWF 105
                                                                                             E LI LINE LA CALLER OF THE CONTROL O
   C
                                                                                                                                                                                                                                                   FLOWF 197
                                AKY . HEATING CONSTANT
    C
                          FLOWF TOR
· C
                                                                                                                                                                                                                                                    FLOWF 109
                        REUD =- 1.0 3#RHPU +UU-+DB /AMUU -- FLOWFILE
                         REUD = 1.0 3*RHPU *UU *DB /APPCU AKW = AKW+UU *DSIN(GAMMAF) / (RHOW*CRHOW*DE LWH**2.00) FLOWF111 FLOWF112
                         IF (Z.CE.ZBLT) GO TO 1
Z = ZBLY
FLOWF114
                                                                                                                                                                                                                                                    FLOWF113
                                                                                                                                                                                        FLOWF116
                                           A car of public final content is to an experience respecting and a public section of the experience of the action 
  C:
                                                                                                                                                                                                                                                    FLOWF117
                                                                                                                                                                                                                                                    FLOWF118
                   THE . TEMPERATURE WALL COME IDES. KI
                                                                                                                                                                                                                                                    FLOWF119
```

```
FLOW F 120
    3 Z = ZKEEP
       TWO = C(16C)*(AKV*(ZRLT-Z ))**C(159)/((SC*DEXP(Z/BZ)/DSIN(THETAG)*FLOWFT21
                                                                              FLOWF 122
      1+2)++. FDO+(AKW/(DELWH+LU +*3.DO))) GTWC
                                                                              FLOWF 123
       co to 2
     1 TWC = 278.06C C(6C)*(AKY*Z )**C(59) / ((SC*DEXP(Z/8Z)/DS IN(THEFAC)*FLOWF124
                                                                              FLOWF 125
      1#2)*#.5D0*(AKW/(DFL WH* UU ##3.D0)))
                                                                              FLOWF 126
       IF (ZKEFP.LT.ZBLT) GO TO 3
                                                                              FLOWE 127
                                                                              FLOW F 128
C
                                                                              FLOWE 129
          AMBLDS = MASS SWALLOWED BY BOUNDARY LAYER (LBM/ SEC)
C
          TW = TEMPERATURE WALL (DEG. K)
                                                                              FLOW FIRM
C
                                                                              FLOWE 131
          TWSP = TEMPERATURE WALL SPHERE (DEG. K)
C
                                                                              FLOWE 132
     2 TWSP = 278.DG &C(60)*(AKV*7 )**C(59) / (AKW*DB**.500*DEXP(2 /14.DUFLOWF133
                                                                              FL 0W F 134
      1 *BZ)) / (UU **1.5D **DELWH))
       AMBLOS = AMBLSD & AMABLO
                                                                              FLOWF135
       IF ((TARL.LE.TWC.AND.2.DC*RN.LT.D.9970*DB).CR. (TABL.LE.TWSP
                                                                              FLOWE 136
          .AND.2.DO*PN.CF.C.SODO*DB)) Th=TABL
                                                                             1F1 OVE 137
       IF (2.DO*RN.LT.C.99DG*DB.AND.TWC.LT.TABL) TW#TWC
                                                                              FLOW F13P
       IF (2.DC*RN.GE.G.SSDC*DS.AND.TWSP.LT.TABL) TW#TWSP
                                                                              FL 09 F 139
                                                                              FLOWF 140
C
                                                                              FLOWF141
 C
          CDSS2A = DRAG*ARFA 2ND ENTPOPY LAYER (FT-SQ)
                                                                              FLOWF 142
 C
 C
          HWE ENTHALPY AT THE WALL (FT-SO/ SEC-SQ)
                                                                              FLOW F 143
                                                                              FLOW F144
        HW = 1.08704*TW
                                                                              FLOW F 145
       COSSPA = COTA-COVA
                                                                              FLPNF146
       IF ( IND.NF.1) GO TO 203
       WRITE (6,103) REUD, AKV, TWC, TWSP, AMBLDS, TW, HW, CDSS2A
                                                                              FI. OWF 148
   103 FURMAT (//9x, 4HP FUP, 12x, 3HAKV.11x,3HTWC, 10x,4HTWSP,9x,6HAMBLD5,
                                                                              FLOWF 149
                                                                              FLOW F15h
          10X, 2HTW, 14X, 2HHW, 7X, 6HCD SS24/2X, 3D14, 51
                                                                              FLOWF151
 C
· C
                                                                              FLOWE 152
          AMRAT = RATIO ABLATION TO BOUNDARY LAYER AIR
                                                                              FLOWF 153
 C
                                                                              FLOWF 154
 r,
          THETSI = SHOCKANGLE UNIVERSAL (RAD)
                                                                              FLOWF 155
   203 CONTINUE
                                                                              FLOWF156
       AMRAT = AMABLD/AMBLDS
                                                                              FLOWF 157
        IF (PICIPU .GT.(19.0C/6.00)) GO TO T
                                                                              FLOW F158
                                                                              FLOWF 159
       THETSI =
                        DAR SIN(1.DO/AMU )
       en this
                                                                              FLOW F160
                       DAR SIN(1.00/AMU *(6.00/7.00*(PICIPU )-13.00/7.00) FLOWF 161
     7 THETSI =
                                                                              FLOW F162
         **.5D0)
     8 THETS! = DMAX! (THE TS! , THE TAC)
                                                                              FLOWF 163
                                                                              FLOWF 164
....
                                                                              FLOWF 165
 C.
 C
           AMSS2D = MASS FLOW 2ND ENTROPY LAYER (UBM/ SEC)
                                                                              FLOWF166
                                                                              FL DW F 167
 C
           335 = NSRN FACTOR
           THETS2 = SHOCKANGLE MAX (RAD)
                                                                              FLOWF 168
 C
           THIS 28 = AVERAGE SHOCK ANGLE FOR SECOND ENTROPY LAYER (RAC)
                                                                              FLOWF 169
          U2C = VELOCITY COME-2ND ENTROPY LAYER "(KET / SEC) " "
                                                                              FLOWF 170
 0
                                                                              CLOWF 171
       AMSS 2D = 2.D 3+PHOU +PN++2.D C+DC CTAN (THETS I) ++2+UU
                                                                              FLOWF172
                                                                              FLOWF173
       U2C = UU - 5.0 2*PHOU *UU **2.00*CDSS2A/AMSS2D
       U?C = DMAX 1(1)20 + 1.00)
                                                                              FLOWF174
        AI=.2860061.0290 (#AMU: ##2.00#(1.00-(U20/UU: ) ##2.00)
                                                                              FLOWE 175
        THETS2 = DAPSIN(1.DO/AMU *((ALE(2.86006AI)**.500)/2:00)***500)""
                                                                              FLOUF 176
        THETS2 = DMAX1(THETS?, THETAC)
                                                                              FL 0W F 177
        THTS ?R . . FD C# ( THE TS2& THE TS1)
                                                                               FLOW # 178
        B35 # C[119]*HU **C[120]
                                                                               FLOW # 179
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IF ( IND .NF . 1) GO TO 2C4
                                                                                                                                                                                               FLOWFIAN
               WRITE (6, 104) AMRAT, THE TSI, AMSSED, UZC, AL, THE TSZ, THTSZB, 835
                                                                                                                                                                                               FLOWF 191
     104 FORMAT (/7X, SHAMBAT, TCX, 6HTHETSI .8X, 6HAMSS2D, 9X, 3HUZC, 11X, 2HAI.
                                                                                                                                                                                               FLOWF 142
                       8X+6HTHETS2+10X+6HTHTS20+8X+3HR35/2X+8014+51
                                                                                                                                                                                               FLOWF 183
C
                                                                                                                                                                                                FLOWFIR4
C
                                                                                                                                                                                               PLOW FIRS
C
                       AMNOS . MASS FLOW NOSE (LAM/ SEC)
                                                                                                                                                                                               FLOW F186
                        SRAT . RATIO BOUNDARY SWALLOWING TO NOSE MASS FLOW
                                                                                                                                                                                               FLOWF 187
C
                                                                                                                                                                                               FLOWE 188
      204 CONTINUE
                                                                                                                                                                                               FLOWF 189
                AMNDS # 3.141592654*RN**2.DO*C(116) *RHOU *UU
                                                                                                                                                                                               FLOW FIRE
                IF (AMBLSD.GE.AMNDS) GO TO 9
                                                                                                                                                                                               FLOWF 191
                SRAT . AMBL SDIAMOS
                                                                                                                                                                                               FLOWF 192
                GO TO 19
                                                                                                                                                                                               TLOWT 103
           9 SRAT = 1.DO
                                                                                                                                                                                               FL OWF 194
                                                                                                                                                                                               FLOYF 195
                                                                                                                                                                                               L OME TOO
                        ENERN * ELECTRON DENSITY AT NOSE CAP (E/CC)
                                                                                                                                                                                              FLOWE 197
                        THRN . NO. OF ELETRONS PRODUCED BY NOSE CAP (E/ SEC)
                                                                                                                                                                                               FLOWFIDE
                        H2C . ENTHALPY COME-2ND ENTROPY LAYER (FT-SQ/ SFC-SQ)
                                                                                                                                                                                               FLOWF 199
                        P2C . PRESSURE COME-2ND ENTROPY LAYER (LEVET-SC)
                                                                                                                                                                                       " FLOWE 200
                        RHOZC . DENSITY COME-2ND ENTROPY LAYER (LBM/FT-3)
                                                                                                                                                                                               FLOWE 20 L
                                                                                                                                                                                               FLIDWE 202
         10 CALL AR 20 IM (10, B.RHO, ERNR TB. V. FRNUTB, ENERA, FRAT SL)
                                                                                                                                                                                     → FLOWF203
                 ENRY # 30.44000* 3.0 Q*AMNO S* SRA T#ENERMARH OU
                                                                                                                                                                                               FLOWF 204
                 P2C + 17.00*AMU **2.0C*0 SIN (THT 528) **2.0^-1.07) *PU /6.00
                                                                                                                                                                                               FL OW F 205
                H26 * HU *P7C* (P2C&6.DO*PU 1/(PU *16.DD*P7C&PU 1)
                                                                                                                                                                                               FLOWFPAS
                 RHO2C = RHOU *(6.0C+P2C&PU )/(P2C&6.00*PU)
                                                                                                                                                                                               FLOWE 207
                 IF CAMBLED GE AMESSOD GO TO 11
                                                                                                                                                                                               FLOW FIRMS
CCC
                                                                                                                                                                                               UL OW IT 200
                                                                                                                                                                                               FLOWF 210
                       HC . ENTHALPY CONF (FT-SQ / SEC-SQ)
                                                                                                                                                                                               FLOWF211
                     PC = PRESSUPE CONF (LR/F1-50)
                                                                                                                                                                                               FLOWF 212
                        RHOC = DENSITY COME (LAM/FT-3)
                                                                                                                                                                                               FLOW FRIT
 Č
                        SCHEM . CHEMICAL LENGTH
                                                                                                                                                                                               FLOWE 214
                        UC = VELUCITY CONE THET / SECT
                                                                                                                                                                                               FLOWF215
                                                                                                                                                                                               FLOW F 216
               RHUC # RHO 20
                                                                                                                                                                                               FLOWF717
                  HC # H2C
                                                                                                                                                                                               FLOW F218
                                                                                                                                                                                               FLOWF 219
                uc = u2c ....
                                                                                                                                                                                              FLOWE 220
                 SCHEM-THO 2C*+C(1171+ SC+AMBL SD/(U2C+AMSS2D)
                 CO TU 17
                                                                                                                                                                                         " FLOWF 222
         11 RPOC - RHOTC
                                                     TO THE THE PROPERTY A CHICAGO SHIP WITH THE TAX STREET WAS A REST OF THE STREET WAS A STREET WAS
                   HC # HINFC
                PC # PICIPURPU
                UC * UINFC
                                                                                                                                                                                         FLOWF 226
                SCHEM . RHD2C++C(117)+ SC+AM $520 / (UZ C+AM) LSO) &
                       RHD 1C++C( 117)+ SC+ (AMRESD-AMS 52D) /(UINF C+AMPLSD)
                                                                                                                                                                                              FLOWF?28
                                                                                                             "Migher of the second s
                                                                                                                                                       FLOW F 230
                         ENSEN - NO. OF ELECTRONS NOSE CAP -EXP AT SHOULDER (E/ SEC)
                                                                                                                                                                                               FLOWF 232
         12 FMSRN # C( 122)*ENRN*AMNDS*(1.00-C(121) & (1.00 GENRN*SCHEM)
                                                                                                                                                                                               FLOW F 213
                        *CE 1211*DEXPERS * SCHEMIT /(AMNDSCC (123) *SCHEM*ENRN
                                                                                                                                                                                      " " FLOW F 234
                        *TH**C1 12411
                                                                                                                                                                                               FLOW F 235
                 IF ( NO.NE.1) GO TO 205 - ......
                                                                                                                                                                                         " "FLOWF236
                WP ITE 48, 1951 AMNOS. SRAT, ENERN, ENRN , PZC , HZC ; RM 02C , RHOC
                                                                                                                                                                                               FLOWF 237
       105 FORMAT LIBY, SHAMNOS, 11%, 41 SRAT, 0%, SHENERN, 9%, 4HENER, 11%, 3HP2C.
                                                                                                                                                                                               FE OWT 238
              FLOWF 230
```

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205 CONTINUE
                                                                               FLMWF24h
                                                                               FLDWF241
                                                                               FLOWFZAC
         ENERGH . EQUILISMIUM ELECTRON DENSITY TEXCCE
                                                                               FLOWE 243
                                                                               FL THE 244
      REDC12 * RHOC / RHOSE
                                                                               FL MM F.245
      FORTO . HC /R TO
                                                                               FL DWF 246
      IF I AMPAT . FO . C. DC; GO TO 13
                                                                               FL DWF 747
      FUGGH = AR BOIMED, 11. %, 4, PHOC12, HC RTD, AMBAT, XYZTBLE
                                                                               FLOW F 248
      CO TO 14
                                                                               FL DWF 240
   13 CALE AP 2DIM 1 9.25. RHOC12. PSTABL HGRTO, HSTABL, ENECH. ENTAUL)
                                                                               FLOWE 250
   14 CHAT INUE
                                                                               FLOW F251
                                                                               FLOWF 252
                                                                               FLOWE 253
         FNBL = NO. OF ELECTRONS LEAVING BOUNDARY LAYER (F/SEC)
                                                                               FLOWE 254
         THERE - CLECTRON DENSITY IN THE BOUNDARY LAYER CE/CCI
                                                                               FLOWE 255
C
                                                                               FLOW F 256
      ENERL # ENEOH#(1.00-0F XP(-822*SCHEM**C(118)))*
                                                                               FLOWE 257
        (921 & B23 * (UC-22.04)/22.04)
                                                                               FLOWE 258
               39.4PDC***.DC*FHCRL*APRLDS/PC
                                                                               FLOW F250
      IF ( IND.NE.1) on to 206
                                                                               FL DW F 260
      HRITE (6,166) HE,PC. LC. SCHEM, ENSRN. ENEQH, ENEBL, ENEL
                                                                               FLOWE 261
  106 FORMATIVILX, SHIC . 12X, SHPC . 12X, SHUIC, 13X, SH SCHOM, BX, SHENS RN, 10X,
                                                                               FLOWF 262
        SHEME OH. LOX. SHENEBL, AX. 4HENBL/2X, AD14.51
                                                                               FL OW F 263
  206 CONTINUE
                                                                               FL OWF 264
                                                                               FL MWF 765
                                                                               FL DW F 266
         AME . MACH NUMBER 2ND ENTERPY LAYER
                                                                               FL DWF 267
         AY 20 = MACH NUMBER COME-2ND ENTROPY LAYER
                                                                               FL PW F 360
         AMINE . FREE STREAM MACH NUMBER
                                                                               FL DWF 269
         CNS = 40. PF ELECTRONS ENTERING WAKE NECK (F / SEC)
                                                                               FL OW F 270
         HE = ENTHALPY 2ND ENTEROY LAYER (FT-SO / SEC-SC)
                                                                               FLOW F271
   THOS - DEMISTRY OND ENTROPY LAYER (LBM/FT-3)
                                                                               FLOWF272
         112 - VELUCITY OF SECOND ENTERPY LAYER (1000 FT/SEC)
                                                                               FLOWF 278
                                                                               FLOWF 274
      ENS # FNAL & FNSPN
                                                                               FLOWF 275
      AMPC # U2C*AMU /UU *{HL/H2C}**.500
                                                                               FLOWF 276
      AM 2C * DMA MILAM 2C . 1 . DC I
                                                                               PLCWF277
      THETCD = THETACA 57.2957755100
                                                                               FLOWERTA
      CALL AR 20 IM 111.12. THE ICO. THITAL. AM2C. EMCTHL. AM2. ETAHL)
                                                                               FLOW FOTO
      CALL AR 201" ILL. 12. THE TOD. THITTEL. AMINEC . E MCTHL. AMINE. ET ABLI
                                                                               FLOW FZPO
      RHITNE = RHO IC+((1.0 %.20(+ANTNEC++2.03)/(1.006.203+AMINE++2.03))
                                                                               PLOWF 281
        **2.5Da
                                                                               FLOWE 292
      FINE = HINEC+((1.0/6.200+AMIMEC++2.00) / (1.006.200+AMINE++2.00))
                                                                               FRSHMITT
      UINF = UINFC *ANTHE /AMINEC + (HINF /HINEC) ** .500
                                                                               FLOW F 284
      RHO2 = RHO2C+((1.DCG.200+AM2C++2.DO) / (1.DCG.20)+AM2+42.DJ)
                                                                               FL NH F 285
        **2.500
                                                                               FLOW F 286
      F2 = H2C+((1.006.200*AM2C++2.00) / (1.006.200*AM2++2.00))
                                                                               FLOWF 297
      U2 = U2C*AM2/AM2C*(H2/H2C)**.500
                                                                               FL OVE 201
      IF CAMPLED GF AMSS2D1 GO TO 21
                                                                               FLOW FZRA
                                                                               FL MW F 290
                                                                               FL OW F 29 1
         AMS * MACH NUMBER SHOULDER
                                                                               FLDWF 292
         HS = ENTHALPY SHOULDER (FT-SQ / SEC-SQ)
                                                                               FLOW F 293
         RES . REYNOLDS NUMBER SHOULDER
                                                                               FLOWE 204
         RHOS . DENSITY SHOULDER (LPH/FT-3)
                                                                               FLOWF 295
        US . VELOCITY SHOULDER (KET / SEC) ...
                                                                               FLINHFIRA
                                                                               FLOWFRAT
      S MK = 2M2
                                                                               FINHERSON
      PIMS # PHO?
                                                                               FLOWE 209
```



#### INOT REPRODUCIBLE

```
FS * H2
US * U2
                                                                              FLOWEROR
FLOWEROL
      SG TG 22
                                                                              FLOWF 302
   21 AMS * AMINT
                                                                              FLOW FROM
      RHOS . PHOINE
                                                                              FL OWF 304
      HS # HINF
                                                                              FLOWE 335
      US . UINF
                                                                              TLOW FROM
   22 RES * RHOS*AMS*REUD*C[169] / (RHOL *AM) 1*(H5/HU 1**C(67)
                                                                              FLOWFITT
      IF CIND-NE-11 GO TO 207
                                                                              FL OW FRAME
      WRITE 16.1071 ENS.AMPC .AMP .RHOP .H2. UP .AMS .RHCS
                                                                              FL OW FROM
  107 FORM AT (/10x, 3HENS, 11x, 4HAM2C, 10x, 3HAM2, 10x, 4HRHC2, 11x, 2HH2, 11x,
                                                                              FLOWERIO
        2HU 2+ 13X+ 3HA M 5+ 9X+ 4HRHO 5 / 7 X+ 3D14 + 51
                                                                              FLOWERIL
  207 CUNT INUF
                                                                              FLOWE 712
                                                                              FLOWFALA
                                                                              FLOWF 314
Č
         ENEN . ELECTRON DENSITY AT THE NECK (E/CC)
                                                                              FLOWF BIS
         IN * ENTHALPY NECK (FT-SQ / SEC-SQ)
                                                                              FLOW FRIA
         INTHS . RATIO NECK ENTHALPY TO SHOULDER ENTHALPY
                                                                              PLOWERT
                                                                              FLOWFBIR
      CS * C(164)GC(145)*D SIN( THE TAC) **.2500*RF S**(-3.00/8.00)
                                                                              FLOWFILD
                                                                              FLOWF320
         *A45**1-.5001
      FLOWF 321
      HN 1HS . 2.00*HM / (2.00*HSQ1.06*US**2.00)
                                                                              FLOWE 322
      ENEN . PHO SEENS HIS/ 30. 490 G**3. 0 344 MALOS HN1
                                                                              FLDWF323
       IF ( IND.NE. 1) GO TO 20P
                                                                               FLOWF324
                                                                               FLOWE 325
      WRITE (6,100) HS.US.PFS.HN.HNIHS.RHOS.ENS.ERFN
                                                                               FL OW FRZA
  108 FORMATC/10x, 2HHS, 13x, 2HUS, 11x, 3HRES, 11x, 2HHN, 10x, 5HHNTHS, 10x;
         4HA HCS, 12X, 3HFNS, 5X, 4HFNFN/2 >, 8D14.5)
                                                                               Ft OW F 3.27
  208 CONTINUE
                                                                               PLOW FR28
                                                                               FL DW F 3 20
                                                                               FL OW FRANC
          RETS # SHOULDER REYNOLDS NUMBER BASED ON THETA
                                                                               FLOWE 331
C
        * THETSS * SHOULDER WAKE MOMENTUM THICKNESS (FT)
                                                                               FLOW F732
          THIBLE . INITIAL WAKE MOMENTLM THICKNESS BASED ON SHOULDER
                                                                               FLOW FR33
          CONDITIONS (FT)
                                                                               FL OWF 334
                                                                               FLOW F235
       THTRES - (COTA-RUOU /(2.00+PI+RUOS))++.500+(UU /US)
                                                                               PLOWFRIA
       IF LAMBLED GE AMSSEDT GO TO 23
                                                                               PL OW F 337
       THETSS . TRINGIT /12.0 C+PT+RHOS) + [CO VAG AMSS2D+COSS2A/AMELSD])
                                                                               PL OW F33P
          ** ** *** /USI
                                                                               FLOW F339
       en To 24
                                                                               FL OW FRAC
   23 THOTSS . THTOLS
24 PETS . THETSSPPES/OB
                                                                               FLOWF 341
                                                                               FLOWF 342
       TE CE GE ZBLT1 GO TO 25
                                                                               FLOW F343
                                                                               FL MW F744
                                                                               FL OWF 345
          AKE - GTCHEM FACTOR
                                                                               FLOWF 346
          HI * DECAY RATE
                                                                               FLOWF 347
          98 - NET SCALING FACTOR
                                                                               FL MW F 34P
          HIT . ELECTRON DECAY RATE FACTOR
                                                                               FL OW FRAG
         GT * FUNCTION AFRO
                                                                               FL DW F350
                                                                               FLOWF 252
       GT . 0.00
       on to 24
                                                                               FLOW F353
   25 CT = [1.00-HK+11.00-HN AIS] /{2.06+C (70)+RHOS+THETSS+US++2.CO
                                                                               I'L DW F354
          *PPTS#11.006MN(HS)))**(-1.00)
                                                                               FLOWERSS
    26 PS . C1871411.0 FG C18414AMPAT44C19518C(9514AMRAT44C(97)
                                                                               FL OWF 35A
         GCT 881+ (RHOS /PHOSL 1++C ( 89) 1
                                                                               FL OWF 357
       BLI = CONTRACTOR PART ACTOR
                                                                               FL OW F358
       #1 * #6#MBB * #46#115#6#114 [#HD5/#HD5L) +#6#125}}/11 * #6#05+#2 * DJ +FHFBLS FLOW 7359
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```
J1*CCON**BCON
                                                                                      FLOW F 360
       AKE = LTHETSSI** (-2.00)-7. 502 P*RHOS*C (100)/ENEN
                                                                                      FLOW FRAL
       IF I IND. VE. 1) OF TO SCO
                                                                                      FLOWE 362
       WRITE (6,109) THIBLS, THEISS, PETS, GT, 95, MIL, BL, AKE
                                                                                      FL OW FR63
  109 FORM AT ( / 7x + 6HTHTELS, 1 CX+ AHTHE TSS + 9X +4HEETS + 10 X + 2HGT + 12X +2HB5 +
                                                                                      FL OWF 364
          11X, 3HR 11, 14X, 2HB 1, 10X, 3HAKE /2X, 8014, 5)
                                                                                      FLOW FRES
  209 CONTINUE
                                                                                      PLOWERSA
       IF (Z.GT.ZALT) GO TO 27
                                                                                      FLOW FRAT
C
                                                                                      FL DW F 358
¢
                                                                                      FL DW F 169
          ENFT = TRANSITION FLECTRON DENSITY (F/CC)
                                                                                      FLOW F370
(
          GICHEM # FUNCTION CHEMICAL
                                                                                      FLOWF 371
                                                                                      FLOWFTYP
       GTCHEM * 1.00
                                                                                      FLOWF 373
       CO TO 24
                                                                                      FLOWF 374
   27 CTCHIM * (1.006HN/(4.0C*C(90)*HS*AKE*RHOS*THETSS*RETS))**(*1.00)
                                                                                      FLOWE 375
   28 FNET =(1.0-3>+C(124)+AMUU +B5+RHOS++C(133)+GT/(THETSS+US++C(134)) FLOWE376
          *(1.00 -DEXP(-DABS(HN)+ (C(135) &C(136)*DABS(HN)+*C(130) &C(131)*DABS(HN)+*C(132)))) & 1.11027*PHOS*C(100)
                                                                                      'FL DWF 277
                                                                                      FLOWF 378
          & EN EN # GITCHEM 1 # CCON # # ACON.
                                                                                      FL OVE 279
       IF LINDAME . 11 GO TO 210
                                                                                      FLOWF 390
       WRITE (6,110) GICHEM, ENET
                                                                                      FLOWF 391
  110 FORMAT (/7X, 6HGTCHEM. 11X, 4HENE T/2X, 2014.5//)
                                                                                      FLOWF 382
                                                                                      FLOW F393
                                                                                      FLOWF 784
  210 CONTINUE
                                                                                      FLOWFRAS
  113 CONTINUE
                                                                                      FL DWT 386
       RETURN
                                                                                      FLOWFIBT
       FNIT
                                                                                      FLOWFIRE
```

CEM IM		FM TM A	1	
	IMPLICIT REAL #8 (A-H, N-Z)	FMITMA	2	
	FUNCTION FYIMAX(X,NC)	FMIMA	1	
	COMMON/"INSK/N.K.ALB (2C).UB(20).XX(20).FI	FMIMA	4	
	COMMINATOR TATEROC . IN . NOONS . IPNT . IFX . LI MIT . IPAND	TH IN A	45	
	COMMON/FORT/ERP. PRAND. FAC. DELTA	FM TMA	6	
C		FM IM A	7	
¢	er e e e	EN IN V	n	9
C	IN THE FIBONACCE OPTIMIZATION TECHNIQUE, FUNCTION FMIMAX	FMIMA	9	
C	IS SET FOUAL IN TURN TO EACH OF THE N UNIMODAL FUNCTIONS OF	FMIMA	10	
Ç	ONE VARIABLE BEING MINIMIZED (MAXIMIZED) IN ACCORDANCE WITH	FM IMA	11	
Č	THE VALUE OF NE.	FMIMA		
i.		EM IM V	-	
£	AN WA	רא דיי א		•
	GO TO [1,1,7], NF	FM TM A		
ı	CALL FFV(1,X, VAL)	EM IM V		
	FM IMAX * VAL	FM IM A	- 1	
*	XX(1) * X	FM (MA	-	
, ,	CALL FFV(2, XX, VAL)	EM IM A	-	
	EM DIAX . Val.	FMIMA		
1000	RETURN	FAIAV		
New YORK THEFT THEFT	FND	FMIMA		
	4 4	Lui Tung M	6.7	

- -

THE CHAPP IS BOX ONE EDGE > 1

1-628

```
CEUN I
                                                                         FUN 1
       FUNCTION FUNITION (XX.N)
       IMPLICIT PEAL*8(A-H.D-Z)
                                                                         FUN 1
      COMMON /CSIG/ XTT, WS1, XODP , DWST, SP12, XEMS , XMSP, XSSP, B1, ZGR2, ZGR4, FUNI
     1XB20, DWBST1, SPH4,8C, DDW, WS4, SIG MDS, IND2
                                                                         FUNT
C
                                                                         FUN:1
                                                                         FUN 1
C
           FUNCTION FUNT COMPUTES THE PULSE SHAPE RADAR RETURN AS A
                                                                         FUN1
C.
         FUNCTION OF DISTANCE BEHIND THE LEADING EDGE OF THE RADAR
                                                                         FUN1
C
                                                                         FUN 1
                                                                               10
                                                                         FUN 1
                                                                               11
                                                                         FUN 1
                                                                               12
      $161= 0.000
                                                                         FUN 1
                                                                               13
      SIG2= 0.000
                                                                         FUN 1
                                                                               14
      $103= 0.00C
                                                                        FUN 1
      SIG4= 0.000
                                                                         FUN 1
                                                                               16
      XXTT = XX - XTT
                                                                         FUN1
                                                                               17
C
                                                                         FUN 1
                                                                               18
         Y1 - REGION AFFECTED BY DVERDENSE SCATTERING
                                                                         FUNT
                                                                               19
  701 Y1 = DMINI(WS1, XCDP)"
                                                                         FUN 1
      Y1 = DMINI(Y1, XXII)
                                                                         FUN 1
                                                                               21
      WS2 = ATT & XOOP & WS1 - XX
                                                                         FUN 1
                                                                               22
      Y1 = DMIN1(Y1, WS2)
                                                                         FUN 1
      TELEXITE 1702, 763, 763
  703 IF(XXTT-WS1-X00P)764.764,762
                                                                         FUN1
                                                                               24
                                                                         FUNT
                                                                         FUN 1
                                                                               26
         SIG1 - PORTION OF PULSE SHAPE DUE TO OVERDENSE RETURN
                                                                         FUN T
                                                                               27
  704 SIG1 = Y1 * DWST * SPH2
                                                                         FUNI
  702 MS2 = 2.CDC * XLMS
                                                                         FUN 1
•
                                                                         FUN I
                                                                               30
         Y 2 - REGION AFFECTED BY FIRST PART OF MULTIPLE SCATTERING
C.
                                                                         FUN 1
                                                                               31
       YP = PMINITUS1, WS21
                                                                        PUN 1
                                                                               32
      WS2 = XXTT - XUUP
                                                                         FUN 1
       Y2 = DM IN 1(W52, Y2)
                                                                         FUN 1
                                                                              74
      WS? = XTT & XMSP & WSI -XX
                                                                        FUN I
                                                                              35
       Y2 = DMIN 11 Y2, WS21
                                                                         FUN L
                                                                              36
      IFCXXTT - X00P1705+706+706
                                                                         FUN L
                                                                              37
  706 IF(XXTT - WS1 - XMSP)7C7.7C7.705
                                                                        FUN I
         SIG2 - PORTION OF PULSE SHAPE DUE TO CONSTANT PORTION OF
                                                                        FUN!
                                                                              30
                                                                        FUN 1
                MULTIPLE SCATTERING REGION
                                                                        FUN 1
                                                                              41
  707 SIG2 = 0.500 + Y7 + DWST + SPH2
                                                                        FUN 1
  705 WS3 = 0.500 + WS1
                                                                        FUN 1
     TE(WS1 = TXX = XTT = XMSP) 17(8,707,709
                                                                              43
                                                                        FUN 1
                                                                        FUN 1
                                                                              45
         Y31 - UPPER LIMIT OF REGION AFFECTED BY SECOND PART CF
C
                                                                        FUNT
C.
               MULTIPLE SCATTERING
                                                                        FUN 1
  TTX - 12W - 1XX = 1EY 807
                                                                        FUN 1
      60 TO 710
  799 Y31 = XMSP
                                                                        FUN 1
  710 IF(XX-(XTT & XSSP))711.711.712
                                                                        FUN 1
                                                                              52
         Y 32 - LOWER LIMIT OF REGION AFFECTED BY SECOND PART CF
                                                                        FUN 1
                                                                              53
               MULTIPLE SCATTERING
                                                                        FUNT
                                                                              64
        Y32 . XXTT
                                                                        THN 1
      CO TO 713
                                                                        FUNI
                                                                              56
  712 Y3? = XSSP
  713 IFEWST - CXXTT - XSSB1716 215 215 TOURSES
                                                                        FUN 1
                                                                              57
                                                              TOMEN
                                                                              58"
```

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Y41 - UPPLE LIMIT OF MEDION MEETING BY SINGLE SCALLERING
 715 Y41 * XSSP
                                                                            FU :1
     CO TO 716
                                                                            FUN! 1
 714
      Y41 = XXT 1-WS2
                                                                            FUN 1
                                                                            FUN I
                                                                                   64
        Y42 - LOWER LIMIT OF REGION AFFECTED BY SINGLE SCATTERING
                                                                            FUN 1
       Y47 = XXTT
                                                                            FUN 1
      1F(XXTT - XMS9)72C,721,721
                                                                            FUN L
                                                                                   67
 721 IFIXXTT - [WS1 & XSSP) 717,717,727
                                                                            TUN1
                                                                                   68
 717 EX1 #(DEXR(-91# Y31) -0F XR(-01# Y32)) # ZC 92/16,000
                                                                            FUN 1
                                                                                   69
      EX2 = ( DEXP(-4, DD 0+ Bl* Y31) - DEXP(-4, DD 7+B1 * Y32))
                                                                            FUN 1
                                                                                   70
                                                                                   77
                                                                            FUN 1
         THE FOLLOWING TEST IS USED TO PREVENT UNDERFLOW
                                                                                   72
      1FLDABS(EX ?) - 1, CD-6) 9007, 9007, 9008
                                                                                   73
                                                                            FUN I
9007 EX7 = 0.000
                                                                            FUN 1
                                                                                   74
9008 FX 2 = 0.2500 * ZCR4 * FX2 * ZCR4
                                                                                   75
      1F(XM20)710,719,718
                                                                            FUN 1
                                                                                   76
                                                                            FUN1
                                                                                   77
         SIG? - PORTION OF PULSE SHAPE DUE TO VARIABLE PORTION DE
                                                                                   78
                MULTIPLE SCATTERING REGION
                                                                            FUN 1
 719 SIG? = DUBSTI * (FX1 & FX2) & (Y37 - Y31) * SPH4 * 80 * CCW
                                                                             FUN1
                                                                                   80
      00 TO 720
                                                                                   91
      SIG3 = DERSTI * (FXE & EXP) & 2,000 * WS4 *(DEXP(-0,500 * B) *
                                                                             FUN 1
                                                                                   82
            X8204Y311- 05 XP1-0.500* 31* X320*Y3211* 80 * 5 PH2**12,000-
                                                                            FUN L
                                                                                   83
     1 X920)/(31*X02") *DWST
      IFCXXIT - X5SP1730,722,722
                                                                            FUN I
                                                                                   85
      - "X1 = DEXP(-4.0) n* n1* Y41) - DEXP(-4.00 n* R1* Y42) - TX2 = DEXP(-B1* Y41) - DEXP(-R1* Y42)
                                                                             FIIN 1
                                                                                   86
                                                                             FUN1
                                                                             FUN L
                                                                                   88
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                                                                             FUNT
                                                                                   βQ
       $164 # 0.250"*DWM $11* ZCR4*FX1*ZCR4 & DOW/81 *45 PH2/16.0 LJ
                                                                                   90
                                                                             FUN 1
         *PWST/DOW & BOY #7032 * FX2
                                                                                   91
                                                                             FUN 1
                                                                             FUN I
                                                                                   92
         SIG - PULSE SHAPE - RADAR PETURN AS A FUNCTION OF DISTANCE
                                                                                   93
                                                                             FUN!
               BINING THE LEADING FORE OF THE RADAR PULSE
                                                                                   94
                                                                             FIIN 1
       SIG # SIG1 & SIG2 & SIG3 & SIG4
                                                                             FIIN 1
                                                                                   95
       TECTNO 2-1130005, 10005, 30005
                                                                             FUN 1
10005 WRITE 16,20005) Y1,5161, Y7,5162, Y31
20005 FORMATC19X,711 Y1=,1PE15,7,6H
                                                                             FUNI1
                                                            Y2=,1PE15,7,10HFUN1
00
                                                                                  100
                                                                                  101
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16919 WETTE 16, 200101 XX, SIG
20010 FORMATE 2X, 2HX=, 1PF15.7,6H SIG=,1PE15,71
                                                                             FUN1 104
Bears on to truction th
                                                                             FUN1 105
                                                                             FUN T
        FUNT # SIE
                                                                             FUNT 107
                                                                             FUNT 108
                                                                             FIIN 1 109
                                                                             FUN 1 110
  101 FUN1 = $516MDS - $161**2
                                                                             FUNI 111
                                                                             FUN 1 112
      RETURN
                                                                             FUN1 113
      FND
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CF123		-						- 44		
	SUBROUT IND								Figu	1
		REALTE			Mir Limite	refer to a re-	HI	I MARKEMENT FOR A 1 MARKS	L154	2
	Lang to th	KLME AL I	V-HFO-T1						F123	74
C					a last				F127	4
C									F123	5
C	SUMBO	NUTINE C12	3 CAN UP	TICHALL	Y - 1	III READ	DATA F	CR A	6123	6
C	REENTRY	VEHICLE	TRAJECTO	SY FROM	INDUT.	CH CALL	SHIRRI	TINE VIXEN	F123	7
T.C	TO CALC	BLATE THE	S DATA.	(2) CA	11 1/1 1/1	A TO CA	E CHELAT	THE CATA		
C	LOD A C	COUNTY TO A	3 1715 1714	121 64	U. L. VIA	N 16 6A	COULDIE	THE LALA	F123	A.
Ċ	(17K, 7K, 1	FCOY TRAL	IEG IUN TA	131 50	MPARE 1	HE DATA	FEM A-	KEENI KY	F123	Q
	VIMICULE	TOAJECTO	BA MIIII	THE DAT	IA FOR A	/ OFCUA	TRAJECT	CKY ANL	E153	10
l.	2 vA F 1 F	TO DIFFERE	NCF S. (	4) CALL	. INTORE	. TE GAL	CULATE	AND PLUT	F123	11
C	A CORRI	DOR INTEG	₩AL. (5	) CALL	INTGRU	TO CALC	ULATE T	HE SIGMA	F123	12
C	SOHARE	INTEGRAL	TH BE US	ED BY 5	เมษากมาน	NE EFFE	CT. (6	1 CALL	F123	13
(,	INTGRU	TO CALCUL	ATE A TA	BLE CH	LAFTHER	ICE CORE	FICTENT	S AND THE	F127	14
C "	PRODUCE	INFLUENC	E CORTEL	CICHIE E	H CTS AT	Cherre	TOTAL NA	1 Francis		-
ŭ	17111111111	1 1 1 1 C () 1 1 1 C	C COMP I	CILIII	COIS NI	SECUL	ICO ALI	HODE2.	F123	15
Č				4					F123	16
•									F1.23	17
	COMMON DCC								F123	19
	COMMON /CI	CCUR / 100	CUR (320)						F123	19
	COMMON JOP	COURT PCC	UP (1177C	)					F123	26
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	CCMMON ZIN									21
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	C THE WOLDS	NEMAX LICE	J.ALMINI	2001 430	9 (40) (8	CD (43)	HCV (40)	. 15 CW L 1 ( 40)		24
	CIMENS IUN	HUNE 21461	+13C WE3 (4	OJ+BCWR	1 (40) +3	CWP2 (41)	1.BCWR3	(40)	F123	25
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	CIMERS TON	BETAPL (16	01.05(16	C) (COFI	NF (2,2,	21 + DA (1)	100,000	loul	F123	27
	CIMENSION	US(166),0	V(160)+0	VAR (50)	DVH (50	) DVL (5-	1 JWG . CC	(16a)	F123	28
	CIMENSIUN	DWL 2(160)	, likL3(16	01 •D 6R1	(163) .0	W82 (16-1	1 - DW931	loul	Г123	•20
	NOT SMERT 3	EMAX(200)	· FMIN (25	01 -H (4 )	i amin	3.501.1	CPIONI	MINITIALIA	F123	30
	CITTENS TUN	NCOMOVES	A NOCC UR	(301 NP	VITACT .	CCC110 (A	10011-06	DC 04 ( 1		
	CIMUNSTON	000714-61	. SA UT I Q.	160-31-	SRIAM	50 (60)	CULLAN	racto;	F123	31
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	EQUITVAL FINC									53
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	PUDIANT ENC								F123	55
					460 t de			** * (* * ***)	F123	. 56, , ,
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	FOUTVAL ENC	E THOOUR (	00235), (	DE COEP)			100		F123	50
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F123 191
       FOUTVALENCE (NOCCURERCE, INALPH)
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       XXX = C_*D0
                                                                            F123 193
          CALLING THE TIMER SUBROUTING TO REGORD THE START CH.
                                                                            F123 194
                                                                            F123 195
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   TO CALL TIMER SCI. TIMERABLE
                                                                            F123 197
 C
                                                                            £123 108
  444
       AUC = 1106CLA
                                                                            F123 100
       VOVC * MIVCH
                                                                            F123 200
                                                                            F123 201
 C SAVE (ICCUP) 122-145) . DCCUR (205-209) AND OCCUR (222) IN DVAR(1-19)
       CALL SAVEDV(1.DVAR VOCCUP)
                                                                            F123 202
                                                                            F123 203
        IFT IREP.NE . 2) GO TO-457
        IHINESCOY.EQ.11 GO-TO 497
                                                                            F123 204
                                                                            F123 205
       CO 111 1 = 1, NOVCHAPA
                                                                            F123 206
        NCON = NCOMOV(I)
 C THE VALUE OF THE ITH DESIGN VARIABLE TO BE PERTURBED IS SAVED IN
                                                                            F123 207
                                                                            F123 208
 C FULTITION THIS VALUE THAT USED TO CALCULATE BASIC DECCY TRAJECTURY.
                                                                            F123 209
                                                                            F123 210
        HULD(1.1) = OCCUR(NOON)
                                                                            F123 211
 C HOLE(2. 1) SAVES THE PERTURBED VALLE OF THIS VARIABLE TO BE USED FOR
                                                                            F123 212
   CALCULATING THE TRAJECTORY OF THE FIRST CUMPARISON DECCY.
                                                                            F123 213
        FOLU(2,1) = DVL(1)
                                                                            F123 214
                                                                            F123 215
 C HOLD (3, 1) SAVES THE PERTURBED VALUE OF THIS VARIABLE TO BE USED FOR
                                                                            F123 216
 C THE TRAJECTORY OF THE SECOND COMPARISON DECOY.
                                                                            F123 217
                                                                            F123 218
                                                                            F123 219
 C POR UNE PERTURNATION ONLY. THIS VALLE MUST BE SAVED IN HOLD(2.1).
                                                                            F123 220
   TH THE PERTURBATIONS ARE MADE. THE SMALLER VALUE MUST BE SAVED IN
                                                                            F123 221
             HOLD(2.1) AND THE LARGED IN HOLD (3.1).
                                                                            F173 222
                                                                            F123 223
       DO 777 11 = 1-NOVC
        1FI TREE NE 21 CO TO 498
                                                                            F123 224
        IFCMBECUY-21401,402,403
                                                                            F123 225
                                                                            F123 226
  C A BASIC CECOY TRAJECTORY WILL BE CALCULATED.
                                                                          F123 227
  401 WLTH # 1
                                                                            F123 228
                                                                            F123 220
        MHIGH = 1
        GU T/1 404
                                                                            F123 230
                                                                            F123 231
  C
  C UNE COMPARISON DECOY TRAJECTORY WILL BE CALCULATED.
                                                                            F123 232
                                                                            F123 233
   442 NLOW = 2
                                                                            F123 234
        NEIGH # 2
        GU TO 464
                                                                            F123 235
                                                                            F123 236
TO C
E THE COMP AP ISON DECRY TRAJECTORIES WILL BE CALCULATED.
                                                                            F123 237
   4.3 MLCW # 2
                                                                            F123 238
                                                                            F123 230
        NEIGH = 3
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r	•	F123	240
	CURCHOON) IS THE LOCATION OF THE DESIGN VARIABLE BEING PERTURBED.	F123	
	VCON * NEGYOVIII)	F123	
	Artiff a After and LT1	-	
ſ		1123	
C MI	TURE CVARTI-19) TO UCCUR(133-145), DECUR(205-209) AND OLGUR( 222)	1123	744
	CALL SAVEDVEZ+DVAR+OCCUP)	F123	245
	CH TO 498	F123	246
C		F127	247
	THE PARTY OF THE PROPERTY OF T	F177	
	TREE EQUALS ONE A PENTRY VEHICLE TRAJECTORY WILL BE CALCULATED.		
	TREE EQUALS THREE REFERENCE VEHICLE TRAJECTORY DATA MUST BE INPUT.		
493	NUR = 1	F123	250
	THIGH = 1	F123	251
.4 <b>9</b> 0	CO 444 KK = NEOW, DHIGH	Flos	252
	1F(1RFF.NF.2) GU TO 5C1	F123	253
C		F123	
	LOWER VALUE OF ITTH OF SIGN VARIABLE TO BE PERTURBED IN LOWE AREA		
Croi		F123	
	IE(KK.EG.2) OCCUP (NCON) = DVL(II)		
(		F123	
CPUT	UPPER VALUE OF 11TH DESIGN VARIABLE TO BE PERTURBED IN COCUR ARRA		H I
	1F(KK.FO.3) OCCURINCON) = DAH(11)	F123	259
501	CONTINUE	F123	260
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	WEITER 6-1100 ICASE - DATE - EMO	F123	262
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C			
	IFILUPT LF.4100 TO 53	F123	
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	NTH4 ST = 0	F123	271
54	CONTINUE	F123	272
	IFIN GFOM .L T. 1) WRITE (6,1102) NGEOP	F123	273
	1F(N CEOM . G1 . 3) WR 1 TF ( 6 . 11(2) NGF OM	F123	274
n - 12 - 1	IF(NGEOM.LT.1)NGFOM=1	F123	275
	IF(NCECM.GT.3)NGFOM=1	F123	
	IF ( INALPH.EQ. 6) GO TO 5	F123	-
	1F((LOPT*(LOPT-2)).EU.O) WRITE (6,1077) LOPT	F123	
	CUST INDE	F123	
٠,	1F(SOPT.NE.O)GO TO 55	F123	-
	The state of the s		
	IF (M FEAT NE . DIVIR ITE (6, 1055) MIFA 1	F123	
<i>-</i> .	IF(NOSCOP.NE.C)WRITC(6,1C56)NOSEOP	F123	
55	IF (MHEAT NE . O)GO TO 56	F123	
	1F(MOSCOP.NE.C)WRITE(6,1C57)NOSCOP	F123	
	CONTINUE	F123	
C		F123	
C	DEFINING NUMERICAL FACTORS.	F123	287
	CODL AM = 7.6485D-9*MW/(SIG*SIG)	F123	2AR
•	FACTR9=SJRT(GAMMA)	F123	289 "
	AL AL 1=0.000	F123	Sou
C ·	THE PIECE ATT A COLUMN TO THE PERSON OF THE	F123	201
Č.	SETTING INPUT OPTIONS FOLAL TO A STORAGE QUANTITY IN URGER	F123	-
č	TO CARRY THEN OVER TO THE FOLLOWING INPUT CASE. UNLESS THEY AF		
C	DEDCE INCO	F123	
· ·	LOPIC#LOPT	F123	
	NTURIO = MINERAL SMITH	F123	4 - 4
	LAM PU = IMALPS	F123	
Ç		5123	
C	CHANGING THE UNITS FROM INCHES (IMPUT UNITS) TO FEEL (UNITS	1153	-00



## NOT_REPRODUCIBLE

Ç		USLD INTERNALLY). PN 1*PN 1/12.COC		F123	201
		RH1#RB1/12.60C		F123	30.2
		LA1=LA1/12.0DC	\$ 400 Miles	6123	
				F123	
		N 2#PN 2/12 - CD 0		F122	
		RU2=9B2/12.000		F123	
		L A 7=1 A 2/12 3000		F123	
		CEL Z = DEL Z / 12. LD C		F123	
		CLTA #DEFAV15 * CDO	11 99 8	F123	
C		The second secon		F123	-
C		SETTING THE DRAG COFFFICIENT QUANTITIES TO ZERC.		F123	
		CDF1NF(2,1,1)=0.0C		F123	
		COF INF( 2, 2, 1) =0.00			
		CDF INF( 2, 1, 2) = 0.0 C		F123	
		CLE INE( 5' 5' 5) =0.DC	pp +41 min		
		CD9#0*00		F123	
		GOP = 1 + 00		F123	
		COPL mir (Pi)		F123	-
		CC1=U • [ (		'F123	
		CFL CEP = U .0D0		F123	
	-	CECOFP = C.CDO		F123	
		CTCFTC=C.ODS		F123	
		TXTEST#C.ODO		6133	
Ç				F123	
C		SETTING THE POTATIONAL QUANTITIES TO ZERO.		F123	
		1F(LGPT.CQ.C)GD TO 2C1		F123	
154	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(##).(00		F123	
		CN # 0 . U∩ C		F123	
		PS (f = 0 + 000		F123	
		(¿(;#ð,ℓ²D()		F123	
		\$480±0.000		F123	
		PHIC =C. CDO		F123	-
	, pr	IF(LOPT.EQ.1)THEALG=G.CDC	per pilet li prin	F123	
	20.1	COAT INUE		F123	
		IF(LOPT.NE.Q)GO TO 2C5	**	F127	
		CO 200 J=1,200		F123	
		TAMAX(J)=C.DO		F123	
		ZMAX(J)=C.OC		F123	
	11.4	FYAXIJ # 0.00		F123	-
		ALMAXIJ)=0.DC		F123	
		TAPINIJ)=C.DC		F123	- ,
		7MIN(J) = 0.DC		F123	
1,4		FMIN(J)=0.D0		F123	
		CONTINUE		F123	
C		ALERES 1987 (C. C. C		F123	345
		FINDING THE TRIGONOMETRIC FUNCTIONS OF THE THRUST CEESES		F123	
		ANGLES.			747
		CTI-ZET=CDS(0.01745325DC+THE ZET)		F123	248
•		the state of the s		F123	740
		STHV ET#SIN(00) 7453290C* THE ZET) CPSZ CT#CDSCO017453290C*PSI ZET) SPSZ CT#SIN(0017453290C*PSI ZET)		F123	350
1.0		SPSZE1=S10(0.017453290C*PSIZET)		F123	351
C				F123	252
C		CHANGING THE UNITS OF ANGLES FROM DEGREES TO MADIANS.		F123	
		GA"Fu= L 17453250 C#GAMF C		F123	354
		SINGL#DSINIGAME 0)		1123	355
		PHI 3=1 .017453750 C*PHIC		F173	356
		PS1 = 1.317453290C+P \$10		F123	
		THE AL J=1.1/174532 SDC# THEALG			359
		NLST = 1.017452290C#ALST		F 123	350

### NOT REPRODUCIBLE

		F123	36	'n
SETTING THE MASS LOSS AND HEATING QUANTITIES TO ZERO.		F123		7
0.001(1-1)=0.00		F122		
the second secon	eranceres commission is criminal to	F123		(69944-30)
26d1(4,1)=6.90		F123		
CO 3 J=1.9	age or selection \$1111	F123		
MDOT(1,J)=C.CDC		F123		
MUNT(2.1)=0.00L	140 01 000 11	F123		4.1
MCC (C3.J)=C.CDC		-		
15(17(4.J)#1.00	у мај за ти заттениванстве	F123	GB 2	4.9
PEPS 6(J) = 0 + 600		F123		
QCu1(2,J)=1.0C		F123		
T (Q;CT (3.4) = C.+DC		F123		
C .		F127	-	-
#C01 = 0 • C125		F123		
PN CO F = 7 . C C	.	F1??		
RHEGIT=C.ODC		F123		
C		F123		
C CALLING IN THE TIMER SUBPOLITINE TO RECORD THE CALLING	IN OF	F122		
C SURPOUTINE VIXEN.		6153		
CALL TIMERS(2,TIMIAB)		F127		
C		F123		ίÚ
CALLING IN SUPROLTINE VIXEN WHICH PERFORMS THE CALCUL	AT LUNS .	F153	36	
CALL VIXEN		F123	1 30	12
c		F123	38	13
C PERFORM THE CALCULATIONS CALLED FOR BY VIXEN.		F123	3.0	14
C CALLING IN THE TIMER SUBROLTINE TO MEASURE THE TIME T	U	F173	३ वट	15
C CALCULATE THE TRAJECTORY.		F123	36	16
(ALL TIMERS(-2, TIMTAR)		F123	3 36	? <b>7</b> 📅
C		F127	3 75	₹ P
C	•	F123		
CALLING IN THE TIMER SUBPOLITINE TO MEASURE THE TOTAL	TIME TO	F12	3 30	<b>)</b> ^
C KEAD IN THE INPUT QUANTITIES AND PERFORM THE CALCULATIL	NS .	F123		
CALL TIMERS(+1.TIMTAR)		F121	3 34	12
	2344 134 1341	F12:	3 39	93
SETTING THE THRUST QUANTITIES TO ZERC.		F12	3 30	94
TH=( ,UPf,	- CHA (Marin III state)	F12	3 39	75
MX = Q . OPC		F12	3 30	96
MY=0.000	The second con-	F12	3 39	97 _
MZ = 0 . UDO		F12	3 30	98
TEXAL(1)=0.CDC	je sopanje az zalenog ne menot - m	F12	3 3	99
TEMAT(2)=C.OOC		F12	3 41	00
TEMAT(2)=C.COC		F12	3 41	ol "
C		#12		
C CHANGING UNITS ON THE GEOMETRIC QUANTITIES FROM FEET	HACK TU	F12	3 4	ევ "∙
C INCHES.		F12	3 40	04
RV1=FN1*12.0DC		F12		
R91=891#12.600		F12	3 4	06
LA1=LA1*12.CDC	A 1	F12	3 4	ጎ7
PN 2=RM 2*12.CDC		F12	3 4	<b>₽8</b>
L A2=L A2*12.7DC		~F12	3 4	(មេ) "
Re7=[-3.7* 12.0DC		F12		
CELY #DELY* 12.000	action is a secret in plantical or 100 or	F12	3 4	11
CCI Z = DEL Z* 12.000		F12	3 4	12
ſ		F12		
C CHANGING UNITS FROM RADIANS TO DEGREES TO PREPARE FOL	A NEW	F12	3 4	14
C CASE.	CALL LINE ROLL	F12	3 4	15
AL ST =4L ST/0.01745379D(		F12	7 4	16
		F12	3 4	17
SETTING THE OPTIONS EQUAL TO THE STORAGE INPUT VALUE	S TU	Γ12	3 4	18
C PREPARE FOR A NEW CASE.	*	F12		
A CHELDING LANGER OF THE PARTY				



# NOT REPRODUCIBLE

INALPH=INALPC	6123	
74TEM STENTHRTC	F123	
LUPI*COPIS	F123	
ITTIRGE .FG .2) GU TO 36	F123	
PR CALL HEADER(2)	F123	
C	F 1 7 3	
C SAVE PERMITRY VEHICLE TRAJECTORY DATA FOR POSSIBLE COMPARISON WITH TO	HE F177	424
C TRAJECTURY OF A DECOY.	F123	427
GO 22 1 = 1, 19107	F123	429
ZSCI) = ZPLOT(I)	F123	420
TS(1) = IP(OT(1)	F123	4.34
IF(109(73).00.c) GO 10 21	F123	
15(10P(64).EQ.1) VS(1) * VPLOT(1)	F123	432
IM(IOP(65).EQ.1) US(I) = VCGP(I(I)	F123	
IF(10P(66).F0.1) RS(1) = BFTAPL(1)	F123	
21 18(109(74).EQ.0) GO TO 22	F123	
IF(100(67).00.1) WLIS(I) = WLIP(I)	F123	
Ir(10P(68).EQ.1) ML2S(I) * ML2P(I)	F123	-
fr(1\p(69).EQ.1) WL3S(I) ≈ W.2P(I)	F1?3	
[#(10P(70).E0.1) WP1S(I) = WF1P(I)	F123	439
1F(1P(71).EO.1) WR2S(I) = WR2P(I)	[123	440.
1F(10P(72).FQ.1) WR3S(I) = WR3P(I)	F123	_
22 CONTINUE	F123	447
C	F123	443
WRITE(6, 1000)(ZS(1), TS(1), VS(1), 0S(1), RS(1), I=1, LFLCT)	F123	
[F(IOP(74).EQ.1)WPITE(6,1001)(ZS(1).TS(1).WP15(1).WR75(1).WR35(	13+ 6154	445
1 NL1S(1), WL2S(1), NL3S(1), 1=1, LPLOT)	F123	
LP=LP	F123	
IF(LP.LT.6)GD TO 4C7	F123	
C .	F123	
C INTEGRATION ROUTINE HAS FAILED. RESTURE DESIGN CHARACTERISTIC VALU	E2 F1%4	400
C TO OCCUR APPAY THEN TRY NEXT RV OF DECOY.	F123	-
RITFICE, 40EL LP	F123	
407 CONTINUE	#123	
CALL SAVEDVI 2, TVAR (OCCUR)	F123	
RCTURN	4153	
3. CALL HEADERINLOW)	F123	
THE DIFFERENCE'S BETWEEN THE REENTRY VEHICLE AND THE CECOY		
QUANTITIES - V. V DOT OVER G. SETA. WAKE LENGTH AND RACAR	F123	450
C CPOSS SECTION FOR THE INPUT RADAR PREQUENCIES.	F123	
		461
to 33 1 = 1. LPLOT 1F(10P(73).Eq.c) GO TO 31		462
1F(10P(64).EQ.1) DV(1) = VS(1) -VPLOT(1)	•	463
18( 108(65)-(Q.1) 00(1) = DS(1) -VGCPLT(1)		454
IFT TOP( 66) .FQ . 1) DB(1) = BS(I) -BETAPL(I)	F123	465
31 IFC 10PC 741 .EQ . 61 GU TO 33		466
IFI ILP(67).EQ. 11 DWL1(1) = WL15(1) -WL1P(1)	F123	467
194 109 (ef) .EO.1) DWL2(1) = LL25(1) -WL27(1)	F123	469
1F(1CP(65).EQ.1) DEL3(1) = EL3S(1) -EL3P(1)	F123	460
IF( 10P( 7( ).EQ. 1) DW91(1) + W315(1) -W91P(1)	F123	470
IF( [OP(71).EQ.1) DWF2(1) = MP2S(1) -MP2P(1)	F123	471
IF( NP( 72) . EQ . 1) DWR 3(1) = WR35(1) + MR3P(1)		472
33 COULT TAUE		473
	F123	474
NR ITECO, ICCUICAPLUTCII, TPLOTCII, VPLOTCII, VOGPLTCII, HET AFLCII, I	F1: F123	475
-11 P(c) T 1	F123	476
1-(18P(74).EQ.11WRITE(6.18C1)(ZPLCTH).TPLCTTH.#WRIFED.#WZPCL	), F123	477
1 NF 3P (   ) + NL 1P (   ) + NL 2P (   ) + NL 3P (   ) +   = 1 + LP LOT )	F1?7	478

```
IFILP ATT 6 GO TO 507
                                                                                 F123 481
C INTECRATION POUTING HAS FAILED. RESTORE DESIGN CHARACTERISTIC VALUES FIRE 482
                                                                                 F123 483
C TO OCCUR APPAY THEN THY NEXT BY DR DECOY.
      WR ITCLE, 4061 LP
                                                                                 F123 4P4
                                                                                 F123 485
      CALL SAVERVEZ-DVAR FOCCURT
      WE IT (( *, 46*6) IDV(1), DD(1), DB(1), I=1, LPLOT)
                                                                                 F123 4PA
      FORMAT (1H) 8X 7HDELTA VEX 7HDELTA DEX 7HDELTA B/(1H 1 P3F15.71)
                                                                                 F123 487
                                                                                 F123 488
      CO TO 777
      CONTINUE
                                                                                 F123 489
                                                                                 F123 490
(
CITE SCOULNCE OF STATEMENTS ENDING AT 50 COMPINES THE HI AND ZPLLT ARRAY F123 491
  THE ZPENT APRAY HAS THE ALTITUDES AT WHICH TRAJECTERY DATA IS SUIPUT. F123 492
C DEL TELOT ARRAY HAS THE CORRESPONDING TIMES.
                                                                                 F127 493
CIFE F ARPAY HAS THE ALTITUDES AT WHICH CORRESPONDING TO EACH HIS FLUND BY F123 494 CIP FORM THE TY ARRAY. THEN THE TIME CORRESPONDING TO EACH HIS FLUND BY F123 495
                                                                                 F123 494
CILIFER INTERPOLATION AND COMBINED WITH THE TPLOT APRAY TO GIVE THE
                                                                                 F123 496
CITE ASKAY OF TIMES COPECSPONDING TO THE IT ALTITUDE ARRAY.
                                                                                 F123 497
      JR = 2
                                                                                 'F123 498
                                                                                 F123 409
      K # (,
      90 50 T = 1, LPLOT
                                                                                 F123 500
                                                                                 F123 501
      JA = J5
                                                                                 F123 502
      (1) 44 J = JA, NCP
                                                                                 F123 503
      K = X & 1
                                                                                 F123 504
       TECZPLUT(1)-H(J)) 35,26,37
      J4 = J & 1
                                                                                 F123 505
35
                                                                                 F123 506
       TT(K) = H(J)
      CALL LINE ITT 2, 2, ZPLOT(1), TPLOT(1), WW, XX)
                                                                                 F123 507
      XX&(U)H#WWHE(X)&XX
                                                                                 F123 508
                                                                                 F123 509
      CC 10 44
      JA = J & 1
                                                                                 F123 510
36
       T^*(K) = ZPLUT(I)
                                                                                 F123 511
                                                                                 Г123 512
        TYM(K)=TPLOT(I)
      CH TO 50
                                                                                 F123 513
                                                                                 F123 514
37
        TICKE = ZPIOI(I)
        TIM(K)=TPLOT(I)
                                                                                 F123 515
      00 TO 54
                                                                                 F123 516
                                                                                 F123 517
      CONT INUE
44
                                                                                 F122 518
St.
      CONT INUE
                                                                                 F123 519
        DG 333 JJ = 1, LPLOT
 95
                                                                                 F123 520
                                                                                 F123 521
        SAVF(1,JJ,KK) = (V(JJ)
        SAVE(2,JJ,KK) = DD(JJ)
                                                                                 F123 522
        SAVE(3,JJ.KK) = DP(JJ)
                                                                                 F123 523
        SAVE(4,JJ,KK) = DWL1(JJ)
                                                                                 F123 524
        SAVE(5,JJ,KK) = DWL2(JJ)
SAVE(6,JJ,KK) = DWL3(JJ)
                                                                                 F123 525
                                                                                 F123 526
        SAVE(7,JJ,KK) = DWKI(JJ)
                                                                                 F123 527
        SAVE(S, JJ, KK) = FIWR 2 (JJ)
                                                                                 F123 528
        SAVE(9, JJ, KK) = DWR3(JJ)
                                                                                 F123 529
          CONTINUE
333
                                                                                 F123 530
                                                                                 F123 531
C
C
                                                                                 F123 532
                                                                                 £123 533
       IFEKK . SQ .N FIGH . AND . NDECDY . EQ. 2) NDDCQY = 2
                                                                                 F123 534
       IF(KK.50.NFIGH.AND.NDECUY.EQ.3) NDOCDY =
                                                                                 F123 535
                                                                                 F123 536
  INFULFICAT PRODUCE AND OUTPUT FIRST AND SECOND DIFFERENCES EETWEEN
                                                                                 F123 537
  FAS IC RECRY DATA AND COMPARISON DECOY DATA SAVED IN DC 333 LUCP
                                                                                 F123 539
  AT APECIFIED ALTITUDES AND PRODUCE SCATICE PLOTS OF THE SAVED
                                                                                 F123 539
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and the second of the second o	E VALUE OF THE DESIG	N MAULANTE REING V	ARTEC	£123	540
C THIRE WILL HE THR	EF POINTS ON FACH GE	APH.	Pr / Nr New Work	F123	
	228 OT OR (0.1	1.00	m 1	F123	10.00
161 100 1641 *60	1.13			F123	
	1, 7, 1, 3915, 3957, BCV.	DATE ALECT	Y)	F123	
111100(65).FQ	1.1)	N 700 00 00 00000	4.1	F123	
	2, 7, 4, 1916, 3994,600,	DE TOURSULEME DEGLE	N I	F129	
164 1094 661 461	; • 1	DA JOASA BH BALLST	0.1	F122	
The second secon	14 14 14 22 14 22 22 24 25 27 27 27 27 27 27 27 27 27 27 27 27 27	STREET, STREET	MAN THE STATE OF	F123	
600 [FCIOP(74).FG - 1FCIOP(67).FG				F123	e 17.
10 AUL INTGEL C	22, 6, 10, 3941, 3956, 80	WE! +DWL! + TOWEL + SWEL	.8H WAKE LLI	r123.	551
16 ( 100 ( 631 - F)	).1)			F123	
ICALL INTERECT	23, 6, 13, 3542, 3557,80	HEZ . TWLZ . TCWLZ . SWLZ	1.8H WAKE L2)	F124	
irting(69).ES	1.11			F123	
"ICALL INTERLE	24, 6, 16, 3943, 3 958,BC	KL3 , 7 KL3 , TCWL3 , SWL3	1,8H WAKE L31	F123	
IFL LOP ( 70 ) • Es	).11		ON WARL DIE	F123	
	25.6,19,3544,3959,AC	MET 4 1 MIGT 8 1 C' MIGT 8 2 MIGT	TAUL MAKE NAT	1123	
1Ft 10P (71) *5	26, 6, 22, 3545, 356L,BC	UR2 IN UR2 . TOWR2 . SWR3	AH WAKE R2)	F123	
101 1001 721 .66	(1 - 1 44			F123	560
ICALL INTERL	270 M 25, 3546, 3561 .BC	RAW . D WR3 . TCWP3 . SWR	RH WAKE REE	F127	541
444 CONTINUE				F123	
c	geef 1 (r)			F123	
777 CONTINUE			•	F127	
C	pro 10 19			F123	
C	والمرابعة المستعدمة بالمشتر المستعدد	pa berda upda patan kara ing guapaha pari (dari) d	a constructive state of the same one. A state one part of the one of	F123	
C	n outning occion		O	F123	
	S.DAYL TOCC (L)			F123	
RETURN	Const	*	•	F123	
(- 406 FCRMAT(1HO *	CASE FAILED. TRY NE	IT DESIGN VARIABLES	,'LP =', [12]	F123	571
700 FORMATTING	REENTRY VEHICLE CHAR	RACTERISTICS!)	1 chaptering a season to the house		216
900 FORMATTING .	DECUY GHARAC TEP I STIC	(51)		F123	
TUDE FORMATE				F123	
11107X ALTITU	DE 11 XTIME '7X'VE LOC	TIAMAN ADUGENTEANTE	V. ITY. DEI b. \	F123	
2( 1H F15 . 1 . 4F	(8HAL TITUDE LIX4H II ME		928 Y THW AK F H 3		
1001 FORMATI THO VA	LBX 7HNAKE L 20X7H WAKE	13/11H F15-1-F15-2	-1 P3 E 15 - 7 ·	F123	578
3 (P3F15.2)1	LOV WHALE HAT SON ILL BUILT	Z		F123	579
TOUR FURNATE THIS	IN TEGE ALMADE ". 1 X . A P.	* =* .1 PE16 .7)		F123	
** ** *** *** *** *** *** *** *** ***	SUACACE TEC. 7. 5 YINA	1F 4 .F7.2 .5 X* NF NC *	,F7.1,5X12542E	1E153	581
1 72 FORMAT( 1H)	IOX . 2 4H*4 ** WARNING *	**** NGEOM=13.23H I	S THE SAME AS N	Outsi	201
160M=11	and the state of t		er kilosen. Las		5 583 ·
1.53 FORMATE THE	10x. ****** APNI NG***	sa Fichia. + ib +. 19 0	CI MCCOMEDA COL	F123	585
1 HAS HEEN SE	ET FQUAL TO 1') LCX, *****HARNING***	A. MTHRUSTER .13.4 1	S NOT ALLOWED		586
TRIT LANDISCT SIRC	DEEN SET FOLAL TO O	1)		F123	587
1 AR BODMATING	1CX, 35H*****NARNING*	**** MOPTED AND MHE	AT=13,23H IS TH	IEF123	588
T CAME AC MINS	FAT=1))			1,172.5	ייי אור ו
1656 FORRAT ( THE	1CX. 3 CH+++++ NARNING+	**** MOPT=0 AND NCS	ECP= 13.24H 15 1	HF123	590
THE CARRE AS NO	1560P #01 ***			1,157	1.391
1/157 FORMATCING	1CX.37H*****MARNING*	**** MHEAT=0 AND NO	SECP=13,24H IS	18173	5 592
THE SAIF AS I	NOSFOP = C)			1.15.	י עיני ו
1077 FORMATT 1HU.	1CX, ********ARNING**	****** */ [[X ** [NPU] /	THUY THITOM ON	F127	1 594 1 595
INICES LOPIE	.13. ROTATIONAL CA	FC OF WILLIAM 2.1			596
tr: C	A1 A1 A1	W.	e e e e e e e e e e e e e e e e e e e		June 1964
	EPRODUCI	RUP			
	-101	V-			
	20110		•		
	and				
	JOKO.		•		
01	HIL .				
MK					
101		I-640			
INU		9/ (0.3)			
	A.,				
P. C. H.					
The Court of the C					
Yes - I was a second					

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CGIMAX
                     IMPLICIT REAL # 8 (A-H.O-Z)
                                                                                                                                                                                            GIMAX
                SURPOUTINE GIVAX(AA,BB,NT,NMIMAX,ACCUR,NFUNC,XMIMAX,YMIMAX)
                                                                                                                                                                                            STYAK
                1W±6
                                                                                                                                                                                            GIMAX
                CIMENSION E(100)
                                                                                                                                                                                            GIMAX
                COMMON JENDY ITERM
                                                                                                                                                                                            GIMAX
Ü
                                                                                                                                                                                            GTMAX
¢
                                                                                                                                                                                            CTMAX
                     SUBROUTINE GIMAX. THE CONTROLLING SUBROUTINE FOR THE TWO VARIABLE FIRONACCI SEARCH TECHNIQUE, OPTIMIZES THE SECONDARY
Ç
                                                                                                                                                                                            GIMAX
C
                                                                                                                                                                                            GIMAX
                                                                                                                                                                                                            10
                        INDEPENDENT VARIABLE OF THE FUNCTION. AT EACH EVALUATION PUINT
1
                                                                                                                                                                                            GIMAX
                        IN THIS OPTIMIZATION, GIMAX SUMMONS FUNCTION GMIMAX WHICH
C
                                                                                                                                                                                            GIMAX
                       CALLS FOR THE OPTIMIZATION OF THE PRIMARY VARIABLE.
                                                                                                                                                                                            GIMAX
C
                                                                                                                                                                                            G IM AX
                                                                                                                                                                                            GIMAX
                                                                                                                                                                                                            15
                \Lambda = \Lambda \Lambda
                                                                                                                                                                                            GIMAX
                                                                                                                                                                                                            16
                8=88
                                                                                                                                                                                            GTM AX
                1E (NM IMAX) 10,11,11
                                                                                                                                                                                            CIMAX
                                                                                                                                                                                                            18
                JM IM AX=1
                                                                                                                                                                                            GIMAX
                                                                                                                                                                                                            19
                00 TO 20
                                                                                                                                                                                            GTMAX
                                                                                                                                                                                                            20
        11 JM IMAX = 2
                                                                                                                                                                                            GIMAX
                                                                                                                                                                                                           21
        20 IF (B-A) 21, 22, 23
                                                                                                                                                                                            GIMAX
        21 TEMP =A
                                                                                                                                                                                            GIMAX
                \Lambda = 3
                                                                                                                                                                                            GIMAX
                B=TEMP
                                                                                                                                                                                            GIMAX
                CO TO 23 "
                                                                                                                                                                                            GIMAX
        22 L=1
                                                                                                                                                                                            GIMAX
        25 MP ITE (IW, 26) L
                                                                                                                                                                                            GIM AX
        26 FORMAT (17HO ERROR OF TYPE 12)
                                                                                                                                                                                            GIMAX
                ITERM = 1
                                                                                                                                                                                            GIMAX
                                                                                                                                                                                                            31
                60. TO 170
                                                                                                                                                                                            GTMAX
                                                                                                                                                                                                           31
        23 R=B-A
                                                                                                                                                                                            GTM AX
                                                                                                                                                                                                           77
                IF (MEUNC) 31,30,35
                                                                                                                                                                                            STMAX
                                                                                                                                                                                                            33
        30 IF (ACCUR) 31,31,40
                                                                                                                                                                                            GIMAX
        31 L=2
                                                                                                                                                                                            GTMAX
                                                                                                                                                                                                           35
                GO TO 25
                                                                                                                                                                                            GTMAX
                                                                                                                                                                                                           36
        35 NEUN CZ=NEUNC&2
                                                                                                                                                                                            STY AX
               R 1=( 1.0006 SQRT (5.00 C) 1 72.00 C
                                                                                                                                                                                            CIMAX
                                                                                                                                                                                                           38
               P 2=( 1.CDO+SQRT (5.CDC)) /2.ODC
                                                                                                                                                                                            GIMAX
                                                                                                                                                                                                           30
                ROACC=(PI**NFUNC2-R2**NFUNC2)/(R1-R2)
                                                                                                                                                                                            GIMAX
                                                                                                                                                                                                          40
                00 TO 45
                                                                                                                                                                                            GTMAX 41
        40 ROACC=RIACCUR
                                                                                                                                                                                            GIM AX
                                                                                                                                                                                                          42
        45 IF (ROACC-2.CDO) 50,50,51
56 XMIM AX=(A&B)/2.000
                                                                                                                                                                                            GIMAX 43
                                                                                                                                                                                            GIMAX 44
                YM IM AX≖GM IMAX{XMIMAX↓NF)
                                                                                                                                                                                            GIMAX
                                                                                                                                                                                                          45
                GO TO 179
                                                                                                                                                                                            GIMAX 46
        51 IF (POACC+3.000) 60,60,61
                                                                                                                                                                                            GTM AX
                                                                                                                                                                                                           47
        AC MENTAL BASES AT A STATE OF THE STATE OF T
                                                                                                                                                                                            GIMAX 48
                X4 = 482 . 500*(B-4)/3. 600
                                                                                                                                                                                            GIMAX 49
                YL = GM [MAX ( XL + NF ) T
                                                                                                                                                                                            GIMAX
                TELITERM NE . C) GO TO 160
                                                                                                                                                                                            GTMAX
                YP = GM [MAX (XP,NF)
                                                                                                                                                                                            GIMAX 52
                IFCITEPM .NF . 0) GO TO 15:
                                                                                                                                                                                            GIMAX
                IF(YL-YP) 70,70,71
                                                                                                                                                                                            GIMAX 54
        70 X4 Pt AX ±XR
                                                                                                                                                                                            CIMAX 55
                YM IM AX = YR
                                                                                                                                                                                            CIMAX
                CO TO 170
                                                                                                                                                                                            GIMAX
                                                                                                                                                                                                           57
        71 Y" 1" 1X = XL
                                                                                                                                                                                            GIMAX 58
                YE THAX =YL
```

STYAX

50

61	CO TO 170 K=3				GIMAX 60 GIMAX 61
	E(1) = 1.000	e · · · · · · · ·	r +	1 80	GIMAY 62
	E(2)=1.000				GTMAX 63
74	C(K)=F(K-1)GE(K-2)	* 1 = 1 to the			GIMAX 64
	IF (POACC-F(K)) BC. BC. 75				GTMAX 65
75	IF (K-40) 77,76,76				GIMAX 66
	L=3				GIMAX 67
	CO TO 25	ern wall — en et e en et e member		manager and the second	GIMAX 68
77	K=K&1				G1MAX 69
	CU TO 74	- 1			GIMAX 70
នក	N=K	4			GIMAX 71
1747	XL =ASE(N-2)+R/F(N)	M			G14AX 72
	X = A & F (N-1) + R / F (N)				GTMAX 73
	YL = GM IMAX ( XL + NF )	all our strong major e per formeller e	- pipe I garde of pris and other or and pri	remeria	GIMAX 74
	IF( ITE M.NF. 0) 60 TO 160	1			G14AX 75
	YR = G" ["AX (XP . NF )	*		4	G14AX 76
	TECTION NE CO GO TO 150	,			GIMAX 77
	J#1	•			GIMAX 78
ar	L-14±U1				GIMAX 79
	NUNNEW-J-1	The state of the s		tre construction by	GIMAY 80
	NJ TWU=N-J-2				GIMAX 81
	GO TO (100,101), JMINAX	•			GIMAX 82
100	IF (YR-YL) 130,13C,11C				GIMAX P3
	IF (YR-YL) 110,110,130				GIMAX 84
9 0	IF (J-NE3) 120,160,160				GIMAX 85
	Baxx	s i = ± × s + s perist es	**		GIMAK BA
4	Λ= Δ				GTMAY 87
	R = B- Λ	4			GIMAY JAA
	XP =XL	•			GTMAX RO
	XL = A & E ( NJTHO ) *R /E ( NJ )	11.0			GIMAX 90
	YR =YL				GIMAX 91
	YE'= GM IMAX ( XL , NF ) " " "			**	GIMAX 92
	IF(ITERM.NE.O) GO TO 16	S .			GIMAX 93
12*	J≈J&?				GIMAY 94
	co to so				GIMAX 95
130	IF (J-MG3) 140,150,150				GIMAX 96
140	B≠B				GIMAX 97
* * * *	V= XF	electic soon the expension of the	COMP DE LE SECTION DE LE SECTI	page I open v il promotion	GIMAX 98
	P. = P A				GIMAX 99
	XL #XR				GIMAX 100
	XR=AGE(NJONE)*R/E(NJ)	,			GIMAKIOI
	YL ∓YR				G IM AX 102 -
	YR = GIT [MAX [ XR , NF ]				GIMAX 103
	IFCITERM .NE .OJ 'GO'"TO' 15	9	A-		GIMAX 104
	CO TO 125				G IM AX 105
150	XM IM AX #XR				GIM AX 106
	YM IM AX #YR			2.	G [MAX 107
	CO TO 1701	119 II 99 N F × III = 13	1		GIMAX 108
160	XY (MAX = XL			متدانصین به بهد	GIMAX 109
	YM IMAX = YL	and the contrast of the same of			GIMAX 110
170	RETURN	E - 141 HER - 1 - 1 - 1 - 1 - 1	m - m - 11 - 12		GIM AX 111
	CAO				GTM AX 112

COMINAX	GM IM A	1	
IMPL ICIT PEAL + 8" (A-H, O-Z)	GM IMA	2	
FUNICITION GMEMAX(X.NF)	OM THIA	3	
COMMON ZENDZ ITERM	SMIMA	4	
COMMON /XXSAVE/ XISAVE(40), XZSAVE(40), KEUNT	AMI MD	5	
CUMMINIZMIN SK ZN. K. ALB (20) . UB (20) . XX(2) .F1	GM IMA	- 6	
COMMUNICIPT/ICROC, IN. NEONS, IPNT, IEX, LIMIT, IRANO	CMIMA	7	
COMMON /FORT/CPP , PRANO , FAC , DEL TA	GM IMA	Я	
	GM TM A	9	
Č	CH IN V	10	
FUNCTION GMIMAX, PART OF THE TWO VARIABLE FIBENACCI SEARCH	GM THA	11	
TECHNIQUE, MINIMIZES THE PRIMARY VARIABLE FOR FACH STEP IN TH	E GM IMA	12	
C OPTIMIZATION OF THE SECONDARY VARIABLE.	CM IMA	13	
C .	CM IN V	14	
C	A PT PO	15	
2  XX(2) = X	A MT MO	16	
CALL MIMAX(ALB(1), UB(1), 3,-1, FRR, LI MET, XX(1), VAL)			
GMIMAX = VAL	OMIMA	18	
KOUNT = KOUNT & 1	GM TM A	19	
IF(KOUNT.GT.40) I TERM = 1	CM IM V	-	
IF(KOUNT.GT.40) PETUPN	GM IM A		
XISAVE(KOUNT) = XX(1)	GM IM V		
x = x + (x + y)	GM IMA		
1000 RETURN	GMIMA		
END	CA IN V	25	

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```
GR AM
CORAM
       IMPLICIT REAL*8 (A-H, 0-Z)
                                                                                   GRAM
                                                                                   GRAM
       SUBROUTINE GRAM
                                                                                   GP AM
       COMMON/IDPT/IPROC.NMAX.NCONS.IPNT.IEX.LIMIT.IRAND
                                                                                   GP AM
       COMMON/BLKC/HH(1600), X(40), D(40), E(4)), DP(40), A(40),
      1 B(40), GS, GSP, GTP, GSS, GTT, GSS, FZZ, FP, FS, FC, Z, PZZ, TC, RS, SL, ZZZ,
                                                                                   GRAM
                                                                                   GR AM
      1022 + AXX + FL +
                                                                                   GP AM
      20FLXX, FAK, CXX(40, 10)
       COMMON OCCUR, NUCCUR
                                                                                   GRAM
       DIMENSION OCCUP (4000) . NOCCUR (30) . BB (20,20) . C (20,20)
                                                                                   GRAM
                                                                                          10
       EQUIVALENCE (HH(1), BB(1)), (HH(401), C(1))
                                                                                   GRAM
                                                                                          11
                                                                                   GE AM
                                                                                          12
C
                                                                                   GR. AM
                                                                                          13
             SUBROUTINE GRAM USES THE GRAM-SCHMIDT CRITICG CHALIZ AT ION
                                                                                   GRAM
                                                                                          14
C
          PROCESS. GIVEN A MATRIX C AND A COLUMN VECTOR D. THIS ROUTINE GRAM
                                                                                          15
          DEFINES A SET OF VECTORS, A, WHICH ARE USED TO CALCULATE AN
                                                                                   GR AM
                                                                                          16
C
          ORTHOGONAL SET OF VECTORS, 0, TO BE USED AS THE REW VECTORS OF GRAM
                                                                                          17
          A MATRIX BR. THE INPUT MATRIX C IS THEN PEDEFINED AS THE
                                                                                   GR AM
                                                                                   GR AM
                                                                                          19
          INVERSE (TRANSPOSE) OF THE MATRIX BB.
                                                                                   GR AM
                                                                                          20
C
                                                                                   GR AM
                                                                                           21
C
                                                                                    GR AM
       DO 1 II = 1.NMAX
                                                                                          22
                                                                                    GP AM
       \Delta(111) = 0.00
                                                                                   GRAM
                                                                                          24
       B( II ) = 0.00
                                                                                    GR AM
       CC 1 JJJ = 1.NMAX
                                                                                    GP AM
                                                                                          26
       00.0 = (LLL,II)89
                                                                                    GR AM
                                                                                          27
     1 CONTINUE
                                                                                    GR AM
C
                                                                                    GR AM
                                                                                          29
C
                                                                                    GR AM
       DD 107 I=1.NMAX
                                                                                    GR AM
                                                                                           31
C
                                                                                    GR AM
                                                                                           32
       OO 101 L=1.NMAX
                                                                                    CR AM
                                                                                           33
       ACL) = C.DC
                                                                                    GRAM
                                                                                           34
       DO 101 N#T+NMAX
                                                                                    GR AM
                                                                                           35
       ALL DEALLIGCEL+N3*D(N)
                                                                                    CR AM
                                                                                           36
  101
       CONT INUE
                                                                                    GR AM
                                                                                           37
0
       CO 102 L #1.NMAX ...
                                                                                    GR AM
                                                                                           38
       16(1-1) 111,111,112
                                                                                    GO AM
                                                                                    GR AM
                                                                                           40
       R(L)#A(L)
       GO TO 102
                                                                                    GR AM
                                                                                    GR AM
                                                                                           42
  112
       11 = 1 - 1
       00 103 J=1.IL
                                                                                    GP AM
                                                                                           43
                                                                                    GR AM
       AB = 0.00
                                                                                    CR AM
        CO 104 K=1.NMAX
       AB=ABGAEK)*SB[J.K]
                                                                                    GR AM
                                                                                    GRAM
                                                                                           47
       CONT INUE
                                                                                    GP AM
        RIL I = AIL I + AB*88 (J.L)
                                                                                    GR 4M
  193
       CONT INUF
                                                                                    GRAM
                                                                                           ፍስ
¢
                                                                                    GP AM
                                                                                           51
       CONT INUF
  102
                                                                                    GP AM
                                                                                           52
¢
                                                                                    GR AM
        PMAGS # 0.00
        CO 106 L=1, NMAX ""
                                                                                    GR AM
                                                                                           54
                                                                                    GR AM
                                                                                           55
        BMAGS=BMAGSEB(L1*+2
                                                                                    GP AM
                                                                                           56 "
       COMIT INVE
        HM AG #SQRT ( BM AGS)
                                                                                    GR AM
                                                                                           57
                                                                                    GR AM
                                                                                           58
 C
                                                                                    GP AM
                                                                                           59
```

	10 107 L # Londa A C	GR AM	61
107	BBC (-L )=B(L)/BMAG CONTINUE	GR AM	62
	CIMI IAUS	GR AM	63
Ç		CP AM	
Ç	C NATO AN ACCUMENCE OF DO NATIONAL TRACE AND DESCRIPTIONS OF THE THANK DUE		64
C	C MATRIX IS INVERSE OF BB MATRIX. THIS INVERSE IS THE TRANSPUS		65
	00 108 I=1.NMAX	Co VM	66
	EC 108 J=1. NMAX	GP AM	67
	C(J, I) * B() (1.J)	GP AM	68
	CONT INVE	GR AM	60
¢		CP AM	70
C	·	GP AM	71
	WR [TF(6,5)	CR AM	72
5	FORM AT ( 1HO 18HC MATRIX FROM GRAM)	GR AM	73
C		GP AM	74
	rn 3 1 ≈ 1,4MAX	GR AM	75
3	WRITF(6,2) (C(1,J),J=1,NMAX)	GR AM	76
2	FURMATIAH 61F20.1CJJ	MA RD1	77
C		CB VA	78
	RETURN	CR VM	79
* 1	EVI. Minimizer and desired to the control of the co	GR AM	ВÚ.
	•		
p ex 16 m h			
			+
	i i i i i i i i i i i i i i i i i i i		
		-	verse states and the st
to the second state a tele-	AND COLUMN COLUM		
to the first be not control took		- with 12 today 1 to below	Helia London
	The property of the state of th		
	·		
1 4	The second of th		
	s 1 1001 1 1000 1 100 1 1 1 1 1 1 1 1 1		
	The second		
*	P F 1 NOOR WE P 199 K F 6 HEADSWEARD F 7 SHE CLEAR F 9 KL   P P R R R R R R R R R R R R R R R R R		
	FW C 17 In death about the county of the cou	·	
appear and process of the second	P A T VICE TO DO STANDED TO ANGLE TO ANGLE ANG	ret her has been debote the debt.	method his I sa Miller of
	all made as a manifest the second of the sec		
	· ·		
	and the space of the control of the	*	

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CHEADER
                                                                           HEADE
      IMPLICIT REAL*P(A-H,D-Z)
                                                                            HEADE
      SUBPOUTING HEADER (K)
                                                                           HEADE
      COMMON DOCUR. NOCOUR
                                                                            HEADE
      CIMENSTON OCCUPIACCOL NOCCURISO)
                                                                            HEADE
      FOUTVAL ENCELOCCUR (4000).LPT
                                                                            HEADE
¢
                                                                           HEADE
¢
                                                                            HEADE
C
           SUBMOUTINE HEADER PRINTS THE TYPE OF VEHICLE WHOSE TRAJECTORY HEADS
         IS BEING PROCESSED ALONG WITH THE VALUES OF NINETEEN DESIGN
                                                                           HEADE TO
         PARAMETERS. THE VALUE OF NGCOM, AND THE VALUE OF LP. AN ERROR
                                                                           HEADE 11
         TEST PARAMETER.
                                                                            HEADE
C
                                                                            HEADE 13
(
                                                                            HEADE 14
      K # K
                                                                            HEADE 15
      00 TO(10, 20, 30), K
                                                                            HEADE 16
      WR IT F(6, 700)
                                                                           HEADE 17
10
      69 TO 40
                                                                            HEADE 18
20
      WRITE(6, 800)
                                                                            HEADE
                                                                                  19
      on to 40
                                                                            HEADE 20
30
      WRITE( 6, 900)
                                                                            HEADE 21
40
      CONTINUE
                                                                            HEADE
      WRITE(6,1000)(00CUR(1),1=133,145),(00CUR(1),1=205,209),CCCUR(222),HEADE 23
     190 COURT 151, LP
                                                    RN1 RN2
 1000 FORMATTINO
                                                                          LHEADE 25
                                    THE TAL
                                                                 Re1
     1 AM (% 1
                                           THE TA2
                   LA1
                                                                       RB2* HEADE 26
     2/1H JOE12.2/1H
                                                                            HEADE 27
                            LAMDA2
                                                                     ZON
                                            LA2
                                                      ZTURN
                                                                            HEADE +28
                         THO
                                     TON
                                                 TOFF
                                                              ISP NGEOM
                                                                            HEADE 29
     4 LP1/1H 2012.2.1PE12.4.CP6012.2.216)
                                                                            HEADE 30
700
      FURMATCING *BASIC DECDY CHARACTERISTICS*1
                                                                            HEADE 31
      FORMATCING *COMPARISON DECRY CHARACTERISTICS*1
                                                                            HEADE 32
800
90.4
      FORMATILIN') *FEFERENCE REENTRY VEHICLE CHARACTERISTICS* )
                                                                            HEADE 33
      RETURN
                                                                            HEADE 34
      END
                                                                            HEADE 35
```

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```
CINECUE
       SUBSOUTINE INFCOFEDC . 12 . XQ)
                                                                                   INFOR
       IMPLICIT REAL*8(A-H,O-Z)
                                                                                   INFCO
       REAL #4 DC. XO
       COMMON OCCUR. NOCCUR
                                                                                   INFCO
      COMMON /CPCCUR/ PCCUP(11770)
COMMON /CICCUP/ 10CCUP(320)
                                                                                   INFCC
                                                                                   INFCO
       DIMENSION DC(2),(1(3,50),12(19),NDCCUR(3)) ,DCCUR(4000)
        DIMENSION XQL40)
                     (0(40)
| $(9,160:3), T(160), Z(160)
| BCC+PC+C7101): H
       DIMENSION
                                                                                   INECC 10
                                                                                   INFCO 11
       FOUTVALENCE (PCCOP(C7101) . H
       EQUIVALENCE (PECUPIO7251). S
                                                                                         12
       EQUIVAL FIGE (PCCUP (00001) + 1
                                                    INFCO
       FOUTVALENCE (PCCUP (CC161), 7
                                           1NFCP 14
1NFCP 15
1NFCP 16
       FOUTVALENCELINGGUR ( 000309) . II
       EQUIVAL PREELINCOUR (OCC310). JJ
      FOUTVALENCE (INCCUP(00305), NDECOY)

FOUTVALENCE (INCCUP(00305), LPLOT)

FOUTVALENCE(INCCUP(00312), NCON)
                                                               INFO 17
INFO 18
                                                                                 TNECE 20
                                                                                   INFCO 21
C
          SUBPOUTINE INFCOF CALCULATES A TABLE OF INFLUENCE COEFFI-
CIENTS AND POSSIBLY SECOND DERIVATIVES AT EACH ALTITUDE FOR INFCO 23
C
          WHICH VIXEN STORES TRAJECTORY INFORMATION.
                                                                                   INFCO 24
C
                                                                                   INFCP 25
C
                                                                                   INFCC 126
                                                                                   INFCC 27
       cn 27 1 = 1, 19
                                                                                   INFCO -29
       JP # T
                                                                                   INFCD 29
       IFITZ(11.CO.NCON) GO TO 31
                                                                                   INFCO 30
27
       CONTINUE
                                                                                    INFOD 31
C
                                                                                  " INFCC 32
       JPT #1 O
                                                                                   INFCO 33
31
       CONTINUE
                                                                                   INFCO 34
C
                                                                                   INFCO 35
       10 = 10 E 18
       IF(NDFCOY.CO.2) GO TO 100
X32 = HI3-113-11
                                                                                   INFCO 36
                                                                                   INFCO 37
                                                                     INFCO 30
INFCO 40
INFCO 41
 IFINDECOY.CO.2) GO TO 100

X32 = H(3,11)-H(1,11)

X31 = (H(3,11)-H(2,11))/2.DC

CC TO 5CO

100 AMID= .50C*(H(1,11)&H(2,11))
                                                                          INFCO 40
INFCO 41
INFCO 42
INFCO 43
INFCO 44
INFCO 45
INFCO 46
INFCO 47
       IF(JP,EQ.0)GO TO 102
WE IT F(6,1000, XQ(JP-1) , XQ(JP), (H(K,II),K=1,2), AMID
       CO TO 103
       WRITE(6, 10 50 INCON . (H(K,11), K=1,2), AMID
  102
       WRITE(6, 1100) DC
163
                                                       INECO 47
INECO 48
INECO 49
        Mo ILE( 9* 1500)
        CO 222 I * 1, LPLOT
       TO 222 I * 1, LPLOT

XA = S(JJ, I, 2) - S(JJ, I, 1)

XA = XA/X21

INFCO 50

RP ITE(6, 1300 | Z(I), T(I), (S(JJ, I, K), K = 1, 2), XA

INFCO 51

INFCO 52
170
 222
                                                                                 INFCO 53
INFCO 54
       RETURN
•
                                                                                   INFOO 55
 C
                                                  INFCO 56
        AMID = . SPOR (HC1; III &HE2, II))
  500
        (14*11) = .5DC*(H(1,11)6H(3,111)
                                                                          INECO 57
                                                                                    INTCO SE
        C^{\mu}10 = .50C^{\mu}(H(?,1116H(3,11))
                                                                                    INFER 50
        11 (JP .FC .0168 TO 502
```

```
WP 17E(6,950) XQ(JP-1) . XQ(JP)
                                                                              INFOR 60
      CO TO 504
                                                                              INFER 61
      WRITELS, 10251 NEON " "
502
                                                                              INFCD 62
504
      KP ITEL 6, 14001
                             (HAK, II) .K=1.3) .AMID .BMID.CMID
                                                                              INFCO 63
503
      WRITELS, LICOI DC
                                                                              IMPCO 64
            WR ITE ( 6, 1500)
                                                                              INFOR 65
                                                                              INFOR 66
C
                                                                              INFOR 67
C
                                                                             TIMECO GR
      00 555 I # 1. LPLOT "
                                                                              TNECO 69
      XA= S(JJ+1+2)-S(JJ+1+11
      X8= S(JJ.1.3) -5(JJ.1.1)
                                                                              INFOO TO
                                                                              INFOO TE
      XA = XA/X21
      XB = X^{n}/X32
                                                                              INFOR 72
      · XC = (XR-XA)/X31
                                                                              INFC0 73
530
      WR !TF( 6, 1600)Z( 1), T( 1), (S( )J; T, K) ,K=1,3); XA, XB, XC"
                                                                              INFCO 74
      CONTINUE
                                                                              INFCO 75
555
      RETURN
                                                                              INFCO 76
                                                                             THECH 77
C
                                                                              INFCO 78
717
                                                                              INFCO 79
      FORMAT(16A4)
      FORMATCH 2A4, "SHVARTES" 32X ICH VALUES ARE 33X 14HMIDPOINTS ARE 1 INFCO 80
 950
      FORMATI IN 18. VARIES', 32X' VALUES ARE', 33X' MINPOINTS ARE')
                                                                              INFCO 81
1025
 1750 FORMATI 1HOTE: * VARIES VALUES ARE*,4 X2F15.2. MIDPCINT IS*, F15.2)
                                                                              INFCO 82
      FORMATCHM2A4, 17HVARIES VALUES ARE 2815.2 .1X 11HMIDPOINT IS 1X .
                                                                              INFCO 93
1000
                                                                              INFCD 84
      1F15.21
                                                                              INFCO 85
1100
       FORMATCIM SHOELTA 2A4, IX SHITABLE)
      FRIGHATE H 7x ALTITUDE *,11X*TIME *,4X*FIRST DELTA*,3X*SECUND DELTA*; INFCO 86
1200
                                                                              INFCP 87
      14X* INFLU COEFF*)
      FORMAT( 1H F15.1.4F15.2)
                                                                              INFCO -88
                                                                              INFCO RO
      FORMAT (1H 30X6F15.2)
1400
      FORMATTIN 7X ALTITUDE ", 11X TIME ", 4X FIRST DELTA" , 3X SECOND DELTA", INFCO 90
      14X THIRD DELTA FIRST INF COEF SECON INF COEF . 5X 2ND DERIV!)
                                                                              INFOR 91
                                                                              INFCO 92
1600 FORMATEIN [15.1.7F15.2]
                                                                              INFCD 93
       EN 0
```

```
THEFR
CINTERP
      SUBROUTING INTERPEMENTALY, Y.7)
                                                                       INTER
                                                                              2
                                                                        INTER
      IMPLICIT REAL # 8(A-H.O-7)
                                                                       INTER
      CIMENSION X(M)+ Y(M)
                                                                        INTER
٢
                                                                        THEFT
           GIVEN THE TWO TABLES X AND Y(X) AND A PARTICULAR VALUE OF X
                                                                        INTEP
C,
         CALLED W. SUBROUTINE INTERP FINDS Z EQUAL TO Y(W) BY LINEAR
                                                                        INTER
                                                                        INTER
                                                                              Q
         INTERPOLATION.
                                                                        INTER
                                                                             10
         M IS THE DIMENSION GIVEN X AND Y IN THE CALLING PROGRAM.
                                                                        INTEP
         X IS THE INDEPENDENT VAPIABLE APRAY. IT CONTAINS N ELEMENTS.
                                                                        INTER 12
C.
                                                                        INTER
         Y IS THE DEPENDENT VARIABLE MARAY. IT CONTAINS IN ELEMENIS.
                                                                             13
         W IS A GIVEN VALUE OF X FOR WHICH THE COPRESPONDING VALUE OF
                                                                        INTER
                                                                             14
C
                                                                        INTER 15
         Y IS TO BE FOUND.
        Z IS THE VALUE OF Y FOUND TO CORRESPOND WITH W.
                                                                        INTER 16
                                                                       INTER
                                                                             17.
                                                                        INTER 18
         THIS VALUE IS FOUND BY LINEAR INTERPOLATION.
                                                                        INTER 19
                                                                        INTER
                                                                             20
    TEN IS LESS THAN I OR GREATER THAN M. AN ERROR MESSAGE IS
                                                                        INTER 21
        WRITTEN AND THE RUN IS TERMINATED.
                                                                        INTER 22
         THE ELEMENTS OF THE X ARRAY SHOULD BE FITHER MCNOTONICALLY
                                                                        INTER 23
                                                                        INTER 24
       INCREASING OF MONOTONICALLY DECREASING.
                                                                        INTER 25
         NO CHECK IS MADE FOR SUCH CONSISTENCY.
                                                                        INTEP 26
                                                                        INTER 27
                                                                        INT FP +28
         IF W IS DUTSIDE THE RANGE OF X. THE VALUE OF Z WILL BE FOUND
         BY EXTRAPOLATION USING THE FIRST THO OR THE LAST TWO POINTS
                                                                        INTER 29
                                                                        INTER
         AS APPROPRIATE.
r.
                                                                        INTER 31
       TETNIGT .O.AND.N.LE.MITGO TO 20
                                                                        INTER
                                                                        INTER 33
       WRITELE, 101 M. N.
                                                                        INTER
                                                                              34
       FORMATCING ILHOIMENSION = 112. 1X 124TABLE SIZE = 112)
 10
                                                                        INTER
                                                                              35
       CALL FXIT
                                                                        INTER 36
 r
                                                                        INTER
                                                                              37
                                                                        INLED
                                                                              20
       1F(X(1).LT.X(2)) GO TO 50
7.20
                                                                        INTER
                                                                             30
       00 22 1 = 2. N
                                                                        INTER 40
       IF(W.GF.X(III) GO TO 40
                                                                        INTEP
                                                                             41
 22
       CONT INUE
                                                                        INTER
 C
                                                                        INTER 43
       1 = N
 30
                                                                     --- INTER
     " Z = ((Y(1)-Y(T-1))V(X(T)-X(1-1)))*(W-X(T-1)) "&"Y(T-1)
                                                                              1,4
 40
                                                                        INTER
 5
                                                                        INTER 46
                                                                        INTER
                                                                             47
 C
                                                                        INTER 48
 0
                                                                        INTER 49
       00 55 1 = 2. N
 50
      1F(W.LE:X(1)) 60 10 40
                                                                       TINT FR
                                                                        INTER 51
       CONT INUE
 55
                                                                        INTER 52
       00 TO 30
                                                                        INTER 53
 C
                                                                        INTER 54
       [N]
```

```
INT GR
CINTORL
       SUBROUTING INTERLIKA, KB, LX, KP, KE, Q, R, S, SI G, DC)
                                                                                  INTOR
       IMPLICIT REALWRIA-H. 0-2)
                                                                                  INT GP
       REAL # 4 PC. XQ
                                                                                  INTER
       COMMON OCCUR, NOCCUR
                                                                                  INTGR
       COMMON /CPCCUR / PCCUR (11770)
                                                                                  INT GR
       COMMON /CICCUR/ 1000 UR (320)
                                                                                  INTOR
        COMMON /TIMCOM/ TIM
       COMMON / INSTST/ NDECGY
                                                                                  INT GR
        DIMENSION OCCUR (4000) + NOCCUR (30)
                                                                                  INT GR
       DIMENSION At 27) . B(46) , C(46) . D(160) . E(160) . E(40) . G(40) . H(40)
                                                                                  INT GP
       CIMENSION TOPI 90), IZ(15), Q(40), R(160), S(40), S(60), T(20))
                                                                                  INTOP
                                                                                         12
                                                                                  INT GP
       CIMENSION 22(200) + DC(2)
                                                                                         13
                                                                                   INTIGE
       CIMENSION TPLOT(160).TTM(200).XQ(40).XX(200).YY(200).7(160)
                                                                                         14
                                                                                  INTER
        EQUIVALENCE (PCCUR(11571) . A
                                                                                         15
       EDUTYALENCE (PCCUPICSE41), H
                                                                                  INT GP
                                                                                         16
       EQUIVALENCE (PCCUP(11758), HDIF
EQUIVALENCE (PCCUP(05561), T
                                                                                  THEOR
                                                                                         17
                                                                                  INTOP
                                                                                         12
       EQUIVALENCE (PCCURLOGGCI), TPLOT )
                                                                                   INT OP
                                                                                   INT GP
       EQUIVALENCE (PCCUPIOCISI). Z
                                                                                   INTGR
       FOUTVALENCE (INCOURTMENDED) . TOP
                                                                                         21
       TOUTVAL ENCETIONCURIOCCBIO, JJ)
                                                                                   INTOP
       FOUTVALENCE (INCCURINCALA), KX
                                                                                   INTOR
                                                                                         23
       EQUIVALENCE (TOCCUR(CC302), LPLCT)
                                                                                   INTER
                                                                                         24
       EQUIVALENCE (INCCUPINGS04), NCP
                                                                                   INTIGE
        FOU IVALENCE (PCCURT 04961) & R
                                                                                   INTER
                                                                                         26
        EQUIVALENCE (PECUPIOSOOIL. C
                                                                                   INTOP
        FOUTVALENCE (PECURICESCALL, D
                                                                                   INT GP +2B
         EQUIVALENCE (PCCUP(C52011, E
                                                                                   INT GP
                                                                                         20
        FOUTVALENCE (POCUPIOS361) . F.
                                                                                   INTGE
                                                                                         20
        EQUIVALENCE (PCCUPIC5401). C
                                                                                   THEOP
                                                                                         31
       DATA 17/137, 134, 135, 176, 137, 138, 139, 140, 141, 142, 143, 144, 145,
                                                                                   INT GR
                                                                                         32
      * 205.206.207.208.209.222/
                                                                                   INT GP
                                                                                         33
                                                281
                                                                                   INT CR
                            THE TAI RNI
                                                          LAMDA1 LA1
                                                                           W2
       DATA XQ/16CHW1
                                                                                         34
      1 THETA2 PN2
                           RB2
                                    LAMDA2 LAS
                                                       ZTURN ZON
                                                                                   INT GP
                                                                                         35
                         THEF
                                   I SP
                                           ERROR
                                                                                   INTOP
                                                                                         36
      21 HO
                11111
                                                                                   INT GR
                                                                                         37
                                                                                   INTOP
                                                                                         *10
C
             SUBRUUTINE INTOPL PEPFORMS ONE OF FOUR MAIN TASKS CEPENDING
                                                                                   INT GP
                                                                                         39
           UPON CERTAIN INPUT OPTIONS. THESE ARE (1) TO EVALUATE A
                                                                                   INT GP 40
C
           CORRIDOR INTEGRAL AND PRINT A TABULAR ARRAY OF DATA AT EACH
                                                                                   INT GR 41
           OF A NUMBER OF ALTITUDES. (2) TO EVALUATE A SIGMA SQUARE
                                                                                   INTER
                                                                                         42
           INTEGRAL WHICH IS USED IN THE CALCULATIONS OF SUBPOUTINE
                                                                                   INTGR
                                                                                         43
C
           EFFECT. (3) TO CALL THE PLOT ROUTINE TO OBTAIN A CORRIDOR PLOT. (4) TO CALL THE PLOT ROUTINE TO OBTAIN AN INFLUENCE
                                                                                   INT GP
C
                                                                                   INT GP
                                                                                         45
                                                                                   INT GR
                                                                                         46
 C
           COEFFICIENT PLAT.
                                                                                   INTGR
                                                                                         47
 C
                                                                                   INT GR
                                                                                         49
                                                                                   INTGP
                                                                                         49
        JJ = (LX&21/3
                                                                                  INT CR
        IFF TOP (KAG 2*K01.EQ. 0) GO TO 1120 "
        KO = IOPIKAE4*KB1
                                                                                   INTER 51
        ITTKQ.FQ.11 WRITETE, 10001 DC
                                                                                   INTGR
                                                                                   INT CR 53
         J GO = 0
        161 10P (KAG 3*KB1.60.1) JCO = 30
                                                                                   INTER 54
                                                                                   INTGR
                                                                                         55
        CALL & INFITIAC-NCP-H-Q-B-C)
        CALL IL INFIT(40, HCP, H, S, F, G)
                                                                                   THT GR
                                                                                         56
                                                                                   INT GO 57
        CALL & INFITE 16" LPLD T. Z.P.D.FT
                                                                                   INTOP 58
        1 = Y'1
        11"ST = 0
                                                                                   INTOP 50
```

```
INT OF 60
      CO. m An
                                                                           INT GR 61
      DB = 0.00
                                                                           INT GP 62
      01 = 8(1)*Z(1) \in C(1)
                                                                           INT GP 63
      R1 = 0(1)*/(1) E F(1)
                                                                           INT GP 64
      S1 = \Gamma(1)*Z(1) \in G(1)
                                                                           INTOR 65
      XX[1] = Q1
                                                                           INT GP 66
      YY(1) = 01
                                                                           INTOP 67
      22(1) = S1
                                                                           INTER 68
      IF(P1.GT.S1) NX = 2 =
                                                                           INT GO 69
       IF(RILLT.OI) NY = C
                                                                           INT GP 70
       18(KQ.FQ.0)60 TO 40
                                                                           INT GC 71
       IF(NX.NE.1) ITEST = 1
                                                                           THIT OF 72
       16(NX*NF*1) DP = 7(1)
                                                                           INTCO 73
       IR(NX-1) 16, 30, 20
                                                                         INT 03 74
      WRITE(5, 1100) Z(1), TPLOT(1),Q1, R1, S1, DA, Z(1)
                                                                         TMT GP
       CO TO 46
       WEITE(6, 1100) Z(1), TPLOT(1),Q1, R1, S1, DA, Z(1)
  20
                                                                         THE SET 77
       CO TO 40
                                                                          INTGO
       W" [TE(6, 1100) Z(1) , TPLOT(1), Q1, R1, S1, DA
                                                                                 72
 3)
                                                                           INT OF 79
     MS = LPLOT -1
                                                                   INT OF RO
40
                                                                           INTGP 91
       NR = NCP -1
                                                                           INT GR B 2
 C
                                                                        · INT GR 83
 ٢
                                                                           INT GR 84
       CO 1111 M = 2, KX
                                                                           INT GP 85
       (m 44 K = 2, NCP
                                                                           INTER 86
       J = K - 1
       IFITIMI .GE .H(K)) GO TO 50
                                                                           INTER 87
                                                                        181 P - 88
181 P - 181
       COUT INUE
 44
       J = MR
       00 55 K = 2, tPLOT
                                                                            INT OF 90
                                                                           INT GP OI
       IF(T(M).GF.Z(K)) GO TO 60
       1 = K -1
                                                                           INTOP 92
       CONTINUE
 55
                                                                            INT GP 94
        1 = MS
                                                                            INTGR 95
 60
       Q2 = B(J)*T(M) & C(J)
                                                                            INTOR 96
       R2 = D(1)*T(M) & E(1)
       S2 = F(J)*T(M) & G(J)
XX(M) = 02
                                                                            INT OF 97
                                                                   INT GP 98
                                                                        INTGP 99
       YY\{M\} = R2
                                                                          INT 09 100
       77(M) = 52
                                                                          INT OR 101
          VY = 4
       IF(F 2.GT.S2) NY = 7
                                                                           INT OF 112
                                                                           INT GP 103
       1F(R 2.LT.Q 2) NY = 1
                                                        INT GP 103
INT GP 104
INT GR 105
INT GR 105
INT GR 107
INT GR 107
INT GR 108
INT GR 108
                   C
 С
       CO TO(100, 200, 300, 400, 500, 600, 700, 800, 900), IGO
* 100
       T2 = n.pn:
       T1 = T(M-1)

CA = DA & ADD(LX,TI,T(M),B(J),C(J),D(I),F(I),A)

CALL WRITEM(JGD&10,T(M),TTM(M),Q2,R2,S2,DA,T2,D(I),KQ)

INTGR 112

INTGR 113
                                                                        INT GP 110
 200
                                                                        INTGR 114
       T^2 = -(C(J)-F(I))/(B(J)-D(I))
       EA = DA & ADD((X+T2+T(M)+B(J)+C(J)+D(1)+E(I)+A)
                                                                            INT GO 115
       CALL NO ITEM (JGD 8 20, T(M), TTM (M), D2, R2, S2, DA, T2, D [ ] )+KQ) INT GR 116
                                                                          INT GP 117
       ITTEST.EQ.C) GU TO 950
       CH TH 999
                                                                            INT OF 118
                                                                            INT GP 110
       T2 = -(f(1)-G(J))/(D(1)-f(J))
```

```
INT GP 120
              T1 = T(M-1)
                                                                                                                                                            INT GP 121
              DA = DA & ADD(LX.TI.T2.D(1) .F(1) .F(J) .G(J) .A)
                                                                                                                                                            INT GP 122
             CALL WEITER (JGDG20, T(M) . TTM (M) . QZ . R2 . SZ . DA. TZ . D( I ) . KQ)
                                                                                                                                                            INT GR 123
              IF(ITEST.EQ.1) GO TO 350
                                                                                                                                                            INT GP 124
              ITEST = 1
                                                                                                                                                            INT GR 125
              D3 = T2
                                                                                                                                                            INT 02 126
              T? = -(C(J)-E(1))/(B(J)-D(1))
 359
                                                                                                                                                            INT GP 127
              DA = DA & ADDELX, TZ, T(M) ,B (J) ,C (J) ,D(T) ,E (1) ,A)
                                                                                                                                                            INT GP 128
              CALL WEITEME JODESC, TEMI, TTM (M), Q2, R2, S2, DA, T2, DE TE 1, KQ)
                                                                                                                                                            INT C2 129
              CO TO 999
                                                                                                                                                            TNT OP 130
              T1 = T(M-1)
 400
                                                                                                                                                            INT GE 131
              T2 = -(C(J)-E(I))/(B(J)-D(I))
                                                                                                                                                            INT GP 132
              (A, (1) 3+ (1) C+ (L) 3+ (L) 4+ (1) + (L) 
              CALL WRITEH (JGD&20, T(M), TTM (M), Q2, R2, S2, DA, T2, D1 ( ), KQ)
                                                                                                                                                             INT GR 133
                                                                                                                                                             INT GP 134
              IF( ITEST.EQ. 0) TO TO 550
              GO TO 999
                                                                                                                                                            INT OR 136
  500
              T1 = T(M-1)
                                                                                                                                                           1 INT GP 137
              T2 = 0.00
                                                                                                                                                             INT GR 138
              CALL WRITEM (JGDE1G, T(M), TTM (M), Q2, R2, S2, DA, T2, D( 1 ), KQ)
                                                                                                                                                             TNT GR 130
              CO TO 999
                                                                                                                                                             INT GR 140
               T1 = T(M-1) . ......
  600
                                                                                                                                                            INTGR 141
               \Upsilon_2 = -(F(I)-G(J))/(0(I)-F(J))
               CA = DA & ADD(LX,T1,T2 .D(1),F(1),F(J),G(J),A)
                                                                                                                                                             INT GR 142
                                                                                                                                                             INT GP 143
               CALL WRITEMIJGOG2C, T(M), TTM(M), Q2, R2, S2, DA, T2, D( I ), KG)
                                                                                                                                                             INT GR 144
               IFCITEST .EC . 01 GO TO 950
                                                                                                                                                             INT OF 145
               cu to agg
                                                                                                                                                             INTER146
 '700" ' T2 = -(C(J)-E(I))/(B(J)-D(I))
                                                                                                                                                             INT GP 147
               T1 = T(M-1)
                                                                                                                                                             INT GP 148
               DA = DA \in ADD(1X,T1,T2,B(J1,C(J),D(I),E(I),A)
                                                                                                                                                             INT GP 149
               CALL WRITEM(JGUEZC.T(M).TTM(M).QZ.RZ.SZ.DA.TZ.D( 1 ).KQ)
                                                                                                                                                             INT GR 150
                ITT ITEST . FO. 11 GU TO 750
                                                                                                                                                             INT GR 151
               ITEST = 1
                                                                                                                                                             INT GR 152
               CT = T2
                                                                                                                                                             INT GR 153
               T? = -(F(1)-G(J1)/(0(1)-F(J))
  750
               DA = DA & ADDCLX, T2, T(M) ,D (I) ,E (I) ,F (J) ,S (J) ,A)
                                                                                                                                                             INT GP 154
                                                                                                                                                             INT GP 155
               CALL WETTEM (JGDE30, TIM), TTM (M), Q2,R2,S2,DA,TZ,D( 1 ),KQ)
                                                                                                                                                             INT GP 156
                CO TO 999
                                                                                                                                                              INT GR 157
                T1 = T(M-1)
               T2 = -(E(1)-G(J))/(D(1)-F(J)) ""
                                                                                                                                                            INT GR 158
                CA = DA & ADD(LX, 12, T(M), D(I), F(I), F(J), G(J), A)
                                                                                                                                                              INT GR 159
                                                                                                                                                          INT GR 160
                CALL WEITEM (JGDE 30, T(M), TTM (M), Q2, R2, S2, DA, T2, D(" I ), KQ)
                                                                                                                                                             INT CR 161
                IF( ITEST.FO. 0) GO TO 950
                                                                                                                                                              INT GR 162
                GO TO 999
                                                                                                                                                              INT GR 163
                T1 = T(H-1)
  900
                                                                                                                                                          " INTOP 164
                T2 = 0.00
                DA = DA & ADDILX, T1, T(M), D(I), E(I), F(J),G(J),A)
                                                                                                                                                              INT GP 165
                                                                                                                                                              INT CR 166
                CALL WRITEMIJGOGIO, TIMI, TTMIMI, QZ ,RZ ,SZ ,DA,TZ ,DI I 1,KQ)
                                                                                                                                                              INT GR 167
                CU: TO 999
                                                                                                                                                           "INT GR 168
. 950
                 ITEST = 1'
                                                                                                                                                              INT GP 169
                CR = T2
                                                                                                                                                         ... INT GP 170
                 NX=8Y/3 " '"
   999
                                                                                                                                                              INT GR 171
                 CONTINUE
   1111
                                                                                                                                                              INT GP 172
                                                                                                                                                              INT GR 173
   Ċ
                OCCUPIED) = DA ....
                                                                                                                                                              INT CR 174
                                                                                                                                                              INT GP 175
                OCCUPINDERBY = UB
                                                                                                                                                              INT GR 176
                 IFEKO JEO . 03 ""WETTELES, 19001 "DC , "DAT"DS ". "
                                                                                                                                                              INT OF 177
                 1F( 10P(KAEK8).EO.C) GO TO 2300
                                                                                                                                                             INT OF 17R
                                                                                                                                                              INT OF 179
```

```
RLO = (R(1)/SIG(1))**2
                                                                                        INT OF 180
       fil 2222 I = 2. NCP
                                                                                        INT GP 181
       CALL INTERP(160.1 PLOT.H(I).Z.P.RHI)
                                                                                        TNT:GP 192
       RHI = (PHI/SIGE())**2
                                                                                        INT GRIBS
       SUM = SUM - (REO & RHI)*(H(I) -H(I-1))*.500
                                                                                        INTOP 184
       RLO = RHT
                                                                                        INT GP 185
2222
       CONFINUE
                                                                                        INT GP 186
       OCCUP(KE) = SUP
                                                                                        INT GP 187
       FOIF = H(1) -H(NCP)
                                                                                        INT GR 188
       WRITE(6, 1806) DC+ SUM
                                                                                        INT GRIAG
Ċ
                                                                                        INT GP 190
2360
       16(10P(KA).E0.0) 60 10 4000
                                                                                        THIT GP 191
       CALL AVPLT(XQ,1Z,XX,YY,ZZ,2,DC)
                                                                                        INT GP 192
4000
       IFINTECOY.LT.21 PETUPN
                                                                                        INT GP 193
       IF ( TOP (KAG 5*KB) . FO. 1) CALL THEODE (DC . IZ. XQ)
                                                                                        INT GP 194
       IF (NOFCOY.LT. 7) PETUPN
                                                                                        INT GR 195
       IF(INP(KAG6+KB1.EO.1) CALL AVPLIEND , TZ.T.T.T.1.DC)
                                                                                        TNT GP 196
       RETURN
                                                                                        INT GP 107
                                                                                        INT GR 108
     FORMATCHO 6X 3HALTITUDE 10X 4HTIME 1X 13 HLOWER CORRIDGE 1X 5HRV+DEINT GP 199
T12A4, 1X 13HUPPER CORPIDGE 1X 13HINTEGEL VALUEIX 13HLEAVE CORRIDGE INT GR 200
2 1X 13HEUTER CORRIDGE 5X 5H SLOPE)
INT GR 201
1000
1100
       FORMATCIN F14.1. AF14.21
                                                                                        TNT GP 20 2
       FORMATCIH 196515.7,15X,E15.7)
1200
                                                                                        THE GP 203
1900
      FORMATI THO 244. IX TIMINTEGRAL . TPETS. 7.1X17HLEAVE CORRIDOR AT INT GR 204
      1 515.71
                                                                                        INT GR 205
1900 FORMATI 1HO 13HINTEGRAL OF (2A4-10H/SIGMA) **? 1 PE15.71
                                                                                        INT GP 20A
       ENID
                                                                                        INT GR 207
```

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```
CUNXBES
                                                                        JNXBE
         IMPLICIT REAL ** (A-H, O-P)
                                                                        JNXAF
         IMPLICIT REAL *8 (P-Z )
                                                                        INVER
         IMPLICIT COMPLEX * 16 ( Q )
                                                                        JNXAF
        SUPROUTINE JUXBESTER . 71 . NN . C . ZNR . ZNI ]
                                                                        JAKBE
           DIMINSTON SRIPH, SITE , TEMP(2)
                                                                        JAKRE
Ċ
                                                                        JNKBE
C
           SURROUTING JUXBES IS CALLED BY BESSEL TO CALCULATE THE BESSELJUXBE
C
         FUNCTIONS DE MAXIMUM ORDER. N. AND DE N-1.
C.
         OX* DCMPLX(7R,Z1)
                                                                        JNX BE 12
            Z =CDAB SLOX )
                                                                        JNX 9F
         2 XX 1 = (0.000, 0.000) -- -- --
                                                                        JNXBE
         DANU=(C.CDU.C.CDC)
                                                                        JAKER 15
C
                                                                        JNYNE
                IF( 7- 15.5559599999
                                        110,11,11
                                                                        UNKBE 17
C
                                                                        JNXBI' 18
       DXI = (1.00, C.00)
                                                                        JNXRF
C FORMULA 9.2.5 HANDROOK OF MATH FUNCTIONS-U.S. DEPT. COMMERCE ...
                                                                       JMX BE 70
           QCC * DCMPtx(C, 0.00)
                                                                        JNX SF 21
          X0 * (000.0.000.8) *8XD
                                                                        JMXBF 22
        QPT =(3.141592653595793 + 0.00 )
                                                                      JNXBE 23
         QXNU=DFLOAT(NN1
                                                                        JAVAF 24
         OCH! = 0X -( (C.500+C.00)+ Q XNU 8(.2500+C.00) 14 CP1
                                                                        JAKRE
                                                                              25
         QXMU = (4.00,0,000) * QXNU * QXNU
                                                                        JNXBP 26
         QP = (1.00,0.0C)
                                                                        JNX BF 27
         PKO / (100.0.00.1) - UMK91=00
                                                                        JNX BF +28
         QZB #QXP *# 2
                                                                       JNX BE 29
         OPT + OP
                                                                        JNX BE
                                                                        JNXBF 31
       * DO 12 T=2, 4CCC , 2
         QXX I*DFLOAT( [*[ I-1] }
                                                                        JNXBS
         OPT = -0PT * ( QXMU - QXT * QXT) * (QXMU -( CXT G(2.CU,0.DO) ) JNX9E
     1402 1 / QXX1 / QZ8
                                                                        JNX86 35
         OPTEW = OP & OPT
PTPN = CDABSCOPT/OPNEW)
                                                                        JNXBF 36
                                                                        JNXRF
             PTPN -C 1 13. 14," 14 *** *** *** ***
         TEL
                                                                        JNKRF 38
          OP * OPNEH
   14
        CONT MUE
                                                                        JNKBF 39
                                                                        JNKRF 40
   12
         0XI = 0X1 614.00, 0.001
                                                                        JNX 9F 41
       CONT PIUE
   13
                                                                        JNXBF 42
C
                                                                        JNXRF 43
         0x1 = (2.02,0.00) ----
                                                                        JNXBF 44
         DOT * DO
                                                                        JNX BF 45
          00 15 1=3,4000, 2
         QXXI=OFLOAT(I+(I-1))
                                                                        JNXBE 47
         001 * +001 * (0XMU -0X1 * 0X1 ) * (0XMI) - (0X1 6(2.00.0.06) ) ++2JNXBE 48
     1 1/0XK1 /074
         מקטיתא א ספיב ספד א איייי
                                                                       JNXBF 49
                                                                        JNXBF 50
          HOTON - CDABS! QOT /OONEW )
                                                                        JNXBF 51
          IFE POTON - C 1 16, 17, 17
                                                                        JAXBE 52
   17
        CONTINUE.
                                                                        JNXBF 53
         OO = OONEW
                                                                     JNXRF 54
        0x1 = 0x1 & (4.00.0.00)
   15
                                                                       JAKRE 55
        CONTINUE '
   16
                                                                        JNXRF 56
C
                                                                       JNXRF 57
         DANS = COSORTE (7.00.0.00) QPE /OX ) * (QPNEH * COCCS (WCHI) JNY B# 58
     1-DONER * COSINEDCHIES
```

JNX NE 50

```
CALL DREIME DANS . TEMP )
                                                                                                                                                                                                                     JNX BE 60
                              ZNR # TEMP(1)
                                                                                                                                                                                                                     JNXRE 61
                              INT # TEMP(2)
                                                                                                                                                                                                                     JNXRF 62
                      RETURN
                                                                                                                                                                                                                     JAKAF 67
     C
                                                                                                                                                                                                                     JNX 9F A4
        13
                      CONT INUE
                                                                                                                                                                                                                     JAXRE 65
                       A=1.00
                                                                                                                                                                                                                     JAXRE 66
                      PO 1 1=1.NN
                                                                                                                                                                                                                     JNXBF 67
                 1 A=9FL0AT([] *A"""
                                                                                                                                                                                                                     JAXBE AB
                      728=70/2.DC
                                                                                                                                                                                                                     JAXAF 60
                      721=71/2,00
                                                                                                                                                                                                                     JNKBF 70
                      F=SUNT( 7 28 ** 262 21** 2)
                                                                                                                                                                                                                    JAKRE 71
                      THET =ATAMOP (721,728)
                                                                                                                                                                                                                    JNX 8F 72
                       SUMP = 1.00
                                                                                                                                                                                                                     JNXAF 73
                       SUAT≖0.000
                                                                                                                                                                                                                    JNXSF 74
                              ANG= OFLOATINN)
                                                                                                                                                                                                                   JMKRE 75
                      PNNA =R + +NN /A
                                                                                                                                                                                                                   JNYBE 76
                      X 2NK #Cf) S(ANG) #R NNA
                                                                                                                                                                                                                   JNXBF
                                                                                                                                                                                                                                    77
                      X 2N I = S IN LANG 14R NNA
                      01V=1.00
                                                                                                      ANX DE LA MANAGE DEL LA MANAGE DE LA MANAGE 
                           SR(1) # 1.065
                            SR (2) = 1.065
                                                                                                                                                                                                                JAKAF AL
     C
                                                                                                                                                                                                                 JNXAF AZ
                      00 5 I=1.32000
                                                                                                                                                                                                                  JNX 9F 93
                       15 (110011, 2112, 3, 2
                                                                                                                                                                                                                  JAXAF 84
                 3 Mal
                                                                                                                                                                                                                   JAXAE AS
                      60 TC 4
                                                                                                                                                                                                                   JAXAE A6
                 2 11=2
                                                                                                                                                                                                                  JNXRF A7
                 4 K=2# [
                                                                                                                                                                                                                  JNX AF .8A
                                AT=DFLOATE KI* THET
                                                                                                                                                                                                                  JNX 9F 89
                      DIV=-(DIV+P/DELOAT(I) )+P /OFLOAT(NNGI)
                                                                                                                                                                                                                   JNX AF OF
                       SR(M)=01V+COSIATI
                                                                                                                                                                                                               JNX RF 91
                      STUM DED IVE STULKTE
                      SUMP = STIMP & SR [M]
                                                                                                                                                                                                                   JNXRF 93
                      SUMI = SUMIE STOM
                                                                                                                                                                                                                  JNXBE 04
                       IF (ABS(SR(2)-SR(11)-C16.5.5
                                                                                                                                                                                                                  JAKRE 05
                6 IF (ABS(ST(2)-ST(1))-C17,5,5
                                                                                                                                                                                                                   JNX 9F 96
                 5 CONTINUE
                                                                                                                                                                                                                   JNKRF 97
- ε · ·
       MRITE(6, 1000)

1000 FORMAT (52H SERIES NOT CONVERGED IN 32000 ATTEMPTS FOR JNX BES.) JNX RE 100
                      KRITELE. LOCOL
                 7 ZNR = X 2NR + SUMR - X 2N I + SUMI
                                                                                                                                                                                                                  JAKRETOT
                      INTEX 2018 + SUM ICX 2NT + SUMR
                                                                                                                                                                                                                   JNYBF102
                      RETURN
                                                                                                                                                                                                           FOITRYML"
                      END
```

```
LINFI
CLINEIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LINET
                                          IMPL ICIT BEAL*BEA-H+0-Z1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LINET
                                         SUPPOUTINE LINEITIND , NENTRY , X , Y , A , B )
                                         PIMENSION XIND), YENDI, ACND) - BENDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LINET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LINET
¢
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LIMET
¢
                                                                            CIVEN THE NEMTRY POINTS (X,Y), SURROUTINE LINEIT FINDS THE
 C
                                                              EQUATION OF THE LINE PASSING THROUGH THE POINTS (X.Y) AND (XII), Y(II) IN THE FORM Y=A(I) *XCR(I) FOR I=1.2....NENTRY-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LIMFI
 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LINET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LIMET 10
 C
                                                               THESE COEFFICIENTS CAN THEN BE USED BY THE CALLING PROGRAM
                                                               FOR MAKING A LINEAR FIT WHEN THE INTERVAL REQUIRED IS KNUWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LINET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 IMPI 12
                                                               IN ADVANCE .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LINET 13
  C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LINET 14
                                         M = NENTRY -1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LIMET 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LINET 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. THEY 17
                                            f(U) \times -f(3U) \times f(U) \times f(U) = f(U) \times f(U) = f(U) \times f(U) 
                                            ILIX*[LIA- (LIY = (LIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LIMFT 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LINE 1 10
                                            CONT INUS
   77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LINET 20
   1111
                                       RETURN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. INF1 21
                                             ENIT
```

1-656

```
CLNTERP
        IMPLICIT REAL * E (A-H+0-Z)
                                                                           LNTER
      SUBRIGUTINE LNTEPP (THA TMZ, TABPHO, TAB SND, UPBNDZ, ONBNDZ, Z, RHC, AS QUND HINT FP
                                                                           LNTED
¢
                                                                           INTER
         DIMENSION TBAIMZ(1), TABRHO(1), TABSND(1)
                                                                           LNTEP
C
           SUBPOUTINE UNTERP DOES A LOGARITHMIC INTERPOLATION TO DETAIN ENTER
C
         EREF STREAM DENSITY AND A LINEAR INTERPOLATION TO OBTAIN FREE "LINTER
                                                                                  8
Ç
         STREAM SOUND SPEED FROM THE INPUT TABLES WHEN Z IS LESS THAN ORLNTEP
                                                                                  0
Ċ
         EQUAL TO UPBNOZ AND GOFATER THAN ONS NO Z.
C
                                                                           LNTER
                                                                                 11
      TABLES MUST BE INPUT WITH LONGST VALUE OF ALTITUDE FIRST
                                                                           LNTER
                                                                                  12
C
      TABRIO IS IN LAM /FT**3 TAB SNO IS IN FT/ SFC TRATMY IN FEET
                                                                           LNTEP
                                                                                 13
(
    TIF 7 IS LESS THAN UPBADZ AND GREATER THAN ONBADZ USE TABLES INPUT LATER
                                                                                  14
                                                                           LNTFE
                                                                                 15
C
                                                                           LNTEP
                                                                                 16
      IFEZ-UPBNDZ 11C+4C+30
                                                                           INTER
   10 [F1Z-DMBND7]30,30,40
                                                                                 17
                                                                           LNTER
   40 00 45 1=1.50
                                                                                  18
                                                                           LNTEP
      J = I
                                                                                 20
                                                                           LNTER
      TE( TBATMZ( 1)-2145,46,46" ""
                                                                           LNTFD
                                                                                 21
   45 CONTINUE
      CALL EXIT
                                                                           LNTER
                                                                           LNTER
                                                                                 23
C
                                                                           LNTER
   46 EX =(Z-TOATMZ(J-1))/(TBATMZ(J)-TBATMZ(J-1))
      RHIL= (TABRHO(J-1) + (TABRHO(J) /TABRHO(J-1)) + *EX)/32.174
                                                                           LNTEF 25
                                                                           LNTER
      PATIG=(TAB SND(J)-TAB SND(J-T)) / (TBATMZ(J)-TBATMZ(J-1))"
                                                                                 26
                                                                           INTER
                                                                                 27
      ASOUND=TAB SND(J-1)&(7-TBATMZ(J-1)) * RATIO
                                                                           LNTEP +28
      THO IS IN SLUG/FT**3 A SOUND IS IN ET/SEC
C
      CO TO 50
                                                                           LNTER 29
                                                                           LNTEP
                                                                           LNTFP 31
   30 CALL AMEDIZIZEA SOUNDERHOL
   SC"P STURN
                                                                           LNTER 32
                                                                           LNTEP 33
      ENE
```

```
MASSL
CMASSED
                                                                              MASSE
        IMPLICIT REAL * R (A-H, O-Z)
                                                                              MASSE
      SUBROUTINE MASSLO
                                                                              MASSL
C
                                                                              MASSE
      REAL OF LAMBA
                                                                              MASSE
C
                                                                              MASSL
      CIMENSION OCCUR (4000) . NOCCUR (30) . TW (4 .8) . SOCT (4 .8)
                                                                              MASSL
                                                                                      a
                                                                              MASSL
¢
                                                                              MASSI
                                                                                     10
      EQUITALENCE
      HOCCUR(C32).LAMDA 1.10CCUR(C68).SPD ).(CCCUR(9731.TWSTAG).
2(OCCUR(C91).Z ).(OCCUR(092).ZTR ).(CCCUR(115).C ).
                                                                              MASSI.
                                                                                     11
                                                                              MASSL 12
                                                                              MASSL 13
      3(OCCUR(2644), TW(1,1) ), (OCCUR(2676), ODOT(1,1)),
                                                                              MASSL
                                                                                     14
      4taccurt 27401, S00 T(1, 1) 1
                                                                              MASSL 15
       FOUTVALENCE
                                                                              MASSL
                                                                                     16
      ICHOCCUR(01), JUHOLD), ENOCCUR(02), KKHCLD)
                                                                              MASSL 17
 ¢
                                                                              MASSL 18
       COMMON DOCUR . NOCCUP
                                                                               MASSL
                                                                                     10
 C
                                                                               MASSL
                   41.6
 C
                                                                               MASSL
                                                                                     21
 C
             SUBROUTINE MASSLO CONTROLS THE CALLING OF SUBROUTINE EVIL.
                                                                               MASSL
 Ċ
          MASSED CALLS IN EVIL FOR EACH BODY STATION FOR WHICH MASS LUSS MASSE
 ¢
                                                                               MASSL
                                                                                     24
          CALCULATIONS ARE REQUIRED.
                                                                               MASSE
                                                                                     25
 C
                                                                               MASSL
       J=1 STAG
 C
                                                                               MASSL 27
              LAM
       J= 2
                                                                               MASSL 128
              TURB
 ¢
        J = 3
                                                                               MASSL 29
 C
              SON 1C
                                                                               MASSL
 ¢
                                                                                      31
                                                                               MASSL
             STAGNATION POINT CALCULATIONS.
                                                                               MASSL
                                                                                      32
                                                                               MASSL
                                                                                      33
        K = 1
                                                                               MASSL
        ASSIGN 2 TO NEXT
                                                                               MASSL
                                                                                      35
        QCOT(1.1) =QDDT(1.1)*C
                                                                               MASSL
                                                                                      16
        co ro 100
                                                                                MASSL
                                                                                      37
      2 THSTAG=THE 1, 11
                                                                               MASSL
                                                                                      38
        QUUTI1.11 =000T11.11/C =
                                                                                MASSL
                                                                                      30
        IFIZALT . ZTRIGO TO 3
                                                                                MASSL
        IFILANDA GT . 1 . CD-31GO TO 4
                                                                                MASSL 41
                                                                                MASSI 42
             LAMINAR FLOW. SHARP CONF AT MAXIMUM DIAMETER .
                                                                                MASSL
                                                                               MASSL
        KnR
                                                                                MASSL
        ASSICN 200 TO NEXT
                                                                                MASSL 46
         co to 100
                                                                                MASSI.
                                                                                      47
  C
                                                                                MASSL
             LAMINAR FLOW, BLUNT CONE CALCULATIONS.
                                                                                MASSL
      4 J=2
                                                                                       50
                                                                                MASSL
        K#U
                                                                                MASSL 51
     20 K*K&1
                                                                                MASSL
         TELK .EQ .9160 TO 200
                                                                                MASSI
         ASSIGN 20 TO NEXT
                                                                                MASSL 54
         co to 100
                                                                                MASSL
                                                                                       54
  C
       3 IFTE AMDA . GT . 12 CH - 21 GO TO 5 --
                                                                                MASSL 56
                                                                                       57
                                                                                MASSI
              TUPRULENT FLOW. CALCULATIONS AT MAX. DIAMFTER POINT OF A
                                                                                MASSL SA
  C
                                                                                MASSL
            SHAPP CONF.
```

			MASSL	60	
		K = 9	MASSE		
		ASSIGN 200 TO NEXT	MASSL		(688)44 P 4 R
		CO TO 100	MASSL		
~		G1 171 161	MASSE		
C		TURBULENT FLOW, BLUNT CONE CALCULATIONS.	MASSE		
ŕ		SONIC POINT TURBLENT CALCULATIONS.	MASSE		
1	40	J#4	MASSE		
		K=1	MASSI	, .	00" 11
		•	MASSE		
		ASSIGN 6 TO NEXT	MASSE		
C.		TANGENT POINT AND CONICAL FRUSTUM POINTS TURBULENT FLOW.	MASS1		
١.		Jak	MASSE	-	
	0	( π i)			
~	m #	K=KG1	MASSI.		
	31	1F(K .ED .91GD TO 200	MASSE		
		ASSIGN 30 TO NEXT	MASSE		
		CO. 10 100	MASSE		
	20.0	POTURN CONTRACTOR OF THE PROTURN CONTRACTOR	MASSL		
_	700	FILLORY			
C	-     +00	CONTINUE TO COMMON TRACTORY TO SESSOON USED LODGE NATED TO SESSOON DESCRIPTION OF THE PROPERTY	122AM		
C		CALLING IN SUBROLTINE EVIL TO PERFORM MASS LOSS PATE CALCULATION.	MASSL		
	100	JJ 60L0 = J	MASSL		
	14.7	KK H√F U≡K			
		CALL EVILLAZI	MASSL		
			MASSL		
		TW(J,K)=ZZ	MASSL		14 A 8804
_		SBOIL(1'K) * 250	MASSL		4
C		CO. TO MENT 40 000 00 4 20h	MASSI.		
		CO TO NEXT + (2+2CC+20+6+3C)	MASSL		
		±Nn	MASSL	HQ	
	1 10	The property of the property o	HT.		F 1 H 4
					D 4
		e no secundado a sistema e tenta de tenta de constante de	nge mil + +	1 m/H alph por	en une e
		I NO P I MAN I I			
					e e

IMPLICIT REAL* 8 (A-H,O-Z) SUBROUTINE MATMP (M;N,H,G,S) CIMENSION G(40),S(40) CIMENSION H(40,40) MATRIX MULTIPLICATION  SUBROUTINE MATMP MULTIPL MATRIX H TO PRODUCE A NEW COLUMNSION HOLD PRODUCE A NEW	IES THE VECTOR G	ON THE LEFT BY TH	MATM 2 MATM 3 MATM 4 MATM 5 MATM 6 MATM 7 MATM 8 MATM 9 MATM 10 MATM 11 MATM 12 MATM 13
760 Stil=0.0 CO 703 J=1.N 703 Stil=H(J.E)#G(J)&S(E) 764 RETURN END:	The second secon	The second of th	MATM 14 MATM 15 MATM 16 MATM 17 MATM 18
•			
CITE (2000) - The Court of Brown take driving about a consider made where it is placed to cylinder the a supplied that it is a supplied that it is a supplied to the court	deserri ligger of dibrock kin tolder de lige (kr.) e i ( <b>de lige)</b>	and become and the state of the	OS STREETING SE I LEGISLE E E ES PROPRIO E E ES EN ESCUENTE DE CONTRACTOR DE CONTRACTO
Office of the Bridge of the State of the Sta		N/Y B	
et alles i a			) 1 44 dec (1994 et el el
NORTH IN THE RESERVE OF THE RESERVE	Prilly [its ear lie N mishood rich and House-H room.	an Marietzer Madel M. 1	E HE I DEC DEC DE BENERN PROPERTIENT CONTRACTOR AND
AMORE COMPLETE OF THE COMPLETE COMPLETE AND ADDRESS OF THE COMPLETE COMPLIENT COMPLETE COMPLETE COMPLETE COMPLETE COMPLETE COMPLETE COMPLIENT COMPLETE COMPLETE COMPLETE COMPLETE COMPLETE COMPLETE COMPLIENT COMPLETE COMPLIENT COMPLETE COMPLIENT COMPLETE COMPLIENT C		The state of the s	
The second secon	e <del>en</del> nii takki <b>ji kuu</b> oo kuurii jingaatija ee oo obaay jir <del>a kaasaadda ka ji ji ji ka jiji</del> ii	He july interconnection (see long per long plane) page (in july in the page ). The long per long page page (in july in the page page page page page page page pag	nder edde de ja je tember endere endere medita medita. De de de transferio del del de la composition del del d La composition de la
DP ( Top, v ) I in within w , , ,	ю.		
ти при на при	designation (et l'action des l'action des la little de l'action de	and the state of t	min yakali (III. y cacumponnari-magaga, de syn-occanadossi sudi saesiake-sulumbi-
The second secon	The results and the control of the c	ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا	Hoddiscreen of a new mercy (Market process or personnel of the construction of the con
(Miles to the last in the last of the annual property in the last of the last	PRO + PERMONENTE (1) MERCETORISTO : () (NAMO () CONSERVANT AND () MERCETORISTO () MERCETORISTO ()	<del>namar</del> sez seurge 30 kes <b>age</b> o : <del>"dandges engeles</del> se kijor <del>(andgesoni</del> stien sp. ) Nessan	: des 1860/1980/1964 (selection) desse les ellec <del>répassions des</del> (de pr. de Jacque, adoptide par
	1 \$1 1 AS 118[1 AS 1 ASS ]		संबद्धाः । १० - एः १९४४ <b>ऐ-शर्मशा</b> र्थे । ∤शमास्त
FIRST PORT   POR	the second set of the second s	Annual lates, who supposed in the late of	(Streffect) (1994) (Streffect) (1995) (Streffect) (Str

CHATH	PY IMPLICIT REAL*8 (A-H,n-Z)	on the second	MATMP 1
	SUBRRUTINE MATMPY(A+B+C) DIMENSION A(3),8(3,3).C(3)		MATMP 2 MATMP 3 MATMP 4
0	SUBROUTINE MAIMPY MULTIPLIES A THREE COLUMN MATHIX HAVING THREE COMPONENTS.	BY THREE MATHIX BY	MATMP T
С	DO 1 1=1,3 A(1)=0.000 DO 1 J=1,3		MATMP 9 MATMP 10 MATMP 11
1	A(I)=A(I)&B(I,J)+C(J) RETURN FND	renen (Caro) en elementere can consta	MATMP 12 MATMP 13 MATMP 14
			Infat Law & Two
			,
Principal Service -	The second of the second tension of the second contract of the secon	es en lijker. <del>Ne sk</del> olline o <del>llette i 1000 h</del> erollen sekollinisten e ooler	Pulmorgodos un la distribution $ $
	Mark the Control of t	8.9	
	The first terminal and the second sec		
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	The second problems and the second		
	er er i en	94 90	W14".
	A THE CONTRACTOR OF THE PARTY O		p
344.5			
		17 - Chan	440.

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MAXMT
CMAKM IN
                                                                            TMXAM
       IMPLICIT REAL #8(A-H,D-Z)
       SURROUTINE MAXMIN (NTABLE, NDI MEN, X, XMI N, XMAX)
                                                                            TMXAM
                                                                            MAXMT
       DIMENSION X(NOIMEN)
                                                                            MAKMY
000
                                                                            MAXMI
            SUBPRUTING MAXMIN FINDS THE LARGEST AND SMALLEST VALUES IN
          THE ARRAY, WHICH CONTAINS NTABLE NUMBERS. THE SMALLEST VALJEMAXMI
          IS PLACED IN LOCATION XMIN AND THE LARGEST IN LOCATION XMAX.
                                                                            TMXAM
٢
                                                                            THYAM
C
                                                                                  9
                                                                            MAXMI IO
C
       IF(NDIMEN.GE.NTABLE) GO TO 20
                                                                            MAYMI 11
                                                                           MAXMI 12
       WP ITF16.10) NDIMEN. NTABLE
       CALL FXIT
                                                                            MAKMI 13
                                                                            MAXMI 14
       XM IN # X(1)
-20
                                                                            MAXMI 15
       XMAY = X(1)
                                                                            MAXMI 16
       IFINTABLE . FQ . 11 RETURN
                                                                            MAKMI 17
¢
                                                                            MAXMI 18
       ON TT J = 2. NTABLE
                                                                            MAKMI 19
       IFEX(J).LT.XMINI XMIN * X[J)
                                                                            MAXMT 20
       IFIK(J1.GT.KMAX) XMAX' = X(J)
                                                                            MAXMT 21
77
       CONTINUE
                                                                            MAXMT 22
                                                                            MAKMI 23
 1111
       RETURN
       FORMATCHHILZHDIMFNSION IS 312, 1X 13HTABLE SIZE IS 112/1H 4HEXITE MAXMI 24
 10
                                                                            MAKMI 25
       PHILIP
```

CM	1 MA	X (1 mm) 1 m (4 m) M A A (1 m)	MIHAK	. 1	
		IMPLICIT REAL+8 (A-H,0-Z)	MIMAX	7	
		IMPLICIT REAL+8 (A-H,0-Z) SUBROUTINE MIMAX (AA, BB,NF, NMIMAX, ACCUR, NFUNC, XMIMAX, YMIMAX)	MIMAK	3	
		I W=6	MIMAX	No.	
		DIMENSION E(100)			
		CCMMON /END/ ITERM	MIMAX		-
С			MIMAK MIMAK	6	
Ĉ		The state of the s			
Ċ		FULL CATE IN C. IN CALL IN C.	MIMAX	8	
Ċ		SUBROUTINE MINAX UTILIZES A FIBCNACCI SEARCH TECHNIQUE TO			
		JACOMINU BARISAY BAD A TO MUMINIM SO PUMIXAM BHT DATE	MIMAX	10	
C		FUNCTION WITHIN A DEFINED REGION (AA.BB).	MIMAX	11	
C			MIMAX	12	
C -	1 81	FUNCTION WITHIN A DEFINED REGION (AA.BB).	MIMAX	13	
		A=AA	MIMAX		
		8=88	MIMAX	15	
		IF (NMIMAX) 10-11-11	MIMAK	10	
	10	JMIMAX*1	MIMAX	1000	
		GU TU 20	MIMAY	10 54	
) whom	14	JMIMAYEZ	MIMAY	1 4	
	20	15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MIMAX		**   *****
		TEMP=A			
		A = D	MIMAK		
		B=TEMP	MIMAK	46	
		B=TEMP	MIMAX	63	
	22	GU TO 23	MIMAX		
	- 22	L = 1			
C			MIMAK	20	
	25	WRITE (IW-26) L	MAMAK	27	
	25	FURMAT(17HO ERROR OF TWPE (2)	MIMAK	270	
		ITERM = 1	MIMAK	29	
		6U 1U 170	Millianak	- 0	
	23	Rate A 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	MIMAX	41	
		16 INCHAICA DA DA DE		1	-
	30	1F (ACCUR) 31,31,40	MIMAK	11.2	
	31	L=2	MIMAX		
		GD TO 25	MILMAN	4 4	
	3.5	ELECTOR A A DESCRIPTION OF THE			In is
	-	K1=11.000GSQKT-(5.00011/2.000	THE STREET	30	
		Part Macanar 46 Manta 20 Man	MIMAA	21	MH 4
		R2=(1.000-SORT (5.000)1/2.000 ROACC=(R.**NFUNC2-R2**NFUNC2)/(R1-R2).	MIMAK	1	
		GU TU 45			
	1.0	90 19 99 90426 - Distances to	MIMAX		
c	40	RDACC=R/ACCUR			
L		15 4/04/20 5 4/04 50 50 50	MIMAX	46	
14194.5		IF IROACC-2.0001 50,50,51	MAMIN	44	196 6 996
	50	XMIMAX=(A6B)/2,0D0 YMIMAX=FMIMAX(KMIMAX,NF)	MAMAK	44	
		AMIMOTHEM EMOTE FAIL WAR WER	MIMAK	43	
		GO TJ 170	MIMAK	40	
ç			MIMAK		
C			MIMAK		
-C-	H- 144- 40	The state of the s			
	51	IF (ROACC-3.000) 60.60.61	MIMAK		
	60	XL=A&(H-A)/3.000	MIMAX		
		XR=AL2.0000[8-A1/3.000			
11.15		YL=FMIMAKIXLONF)	MIMAX		
- 11 15		IHITERM.NE.OF GO TO 160	MIMAK		
11			MIMAK	-	
4.1		THE LITER NEW OO GO TO 150	MIMAK		-
			MIMAK		
	70	1F(YL-YR) 70.70.71	MIMAX		
	10	MMI MAX=XR	MIMAK	20	
		AWIWVX=AK	MIMAK	24	
		·			

	GQ TO 170	MIMAX 60
- 71 -	- XMIMAX=XL	MIMAX 61
	VMI NAVVI	MIMAY
- Contractor	60 10 170	Ed XAMIM
C		MIMAX 64
Č	1 = 0	MIMAX 65
Č	The state of the s	MIMAX 66
	K 3	
O.L.	E(1) = 1,000	MIMAX 68
	E(2)=1.000	MIMAX 00
C	E(2)#1.000	MIMAX 70
· .	E(K)=E(K-1)&E(K-2)	MIMAX 71
14		
70	1F (RUACC-E(K)) 80,80,75 1F (K-40) 77,76,76	MIMAX 72
76	GO TO 25	MIMAX 74
		MIMAX 75
17	K*K61 -	MIMAX 76
11.1		MIMAX 77
***	N#K	MIMAX 78
14 404 6 4000E × 16	XL=A&E(N-2)*R/E(N)	
	XR=AGE(N-1) +R/E(N)	WIWAX RO
41	YL=FMIMAX(XL,NF)	
	IF(ITERM.NE.O) GO TO 160	MIMAX 82
	YR=FMIMAX(XR+NF)	
	IF(ITERM.NE.O) GO TO 150	MIMAX 64
	Jal 1 or a 10 or 1	MIMAX 65
C		MIMAX 66
- 90	NJ=N-J	
	NJONE=N-J-1 NJTWD=N-J-2	MIMAX BB
416 1 1 y 401		MIMAX 89 .
	GO TO (100,101), JMIMAX	MIMAX 90
100	IF (YR-YL) 130,130,110	- MIMAX 91
1.01	IF (YR-YL) 110,110,130	MIMAX 92
	IF (J-NG3) 120,100,160	
120	B=XR	MIMAX 94
eller <del>est</del> t, i atti	A A A SECTION OF THE	MIMAX 95
	<b>4 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 1 1 1 1 1 1 1 1 1 1</b>	MIMAX YO
<del>nje spranski</del> u H	XXIIIXL Adja (I and a) francourse (sold francourse in the stand and as for a non-section and a non-sec	MIMAX 97
	XL=AGE(NJTWO)*K/E(NJ)	HIMAX 98
hi#+ 1 + 4 or	XK=XF Vist Full of the last section of the control	414AX 99
	YL=FMIMAX(XL,NF) - IF(ITERM-NE.0) -GU-TO-160	MIMAX100
<del>111   1</del> 11   4 m	IFI ITERM-NE.OJ-GU-TO-160	MIMAXIO1
125	J=J£1	MIMAX102
<del></del>	- GO TO 90	EOIXAMIM
C		<b>ACLXAMIM</b>
1 30	1F (J-N63)-140,150,150	MIMAX105
140	B=B	MIMAX106
H 16	B=B - A=XL -	MIMAXLO7
	H=B-A	MIMAXIOS
**************************************	XL=XK	MIMAX109
100	(LN)3/4+(3MOLM)3A=XX	MIMAXILO
han Harply same one		MIMAXILI
	YK#FMIMAX(XR.NF)	MIMAXII2
r' ∳ip sipi i u	1F(1TERM.NE.O) GD TO 150	LILXAMIM
dh (2)	GU TO 125	MIMAX114
C	the contract of the contract o	MIMAXILD
	XMI MAX=XR	MIMAXILD
	YMIMAX=YK II was a grown to a second to the	MIMAXIL7
	GU TO 170	MIMAXALH
160	XMIMAX=XL	MIMAXII9

170 KETURN	MIMAX121
	ments of the state
and the second s	
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A CO COMMING COLAR AS 1	. 100 110
F.E 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
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	ere and the
	4 × 41 × 41
	1 X4 3-1-10-1

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MISC
                                                                  ... MISC
    REAL®S LAI, LA2, LAIF, LAMDAI, LAMDA2, LAMDIF

- CGMMON OCCUR, NUCCUR

- COMMON /IGDHL/ IGDL(20), IGDH(20)

MISC
     COMMON /IGDHL/ IGDL(20), IGDH(20)
                                                                             ٥
                                                                  MISC ..
    --- COMMON: / IXCOM/- XCOM (200)--- ICOM(200)---
     COMMON /CPCCUR/ PCCUR(11770)
                                                                    MISC
                                                                             a
     · UIMENSION ACCELLACE
                                                                     MISC
                                                                             9
                                                                  MISC
      DIMENSION DIF(6), NOCCUR(30), OCCUR(4000), RATIO(8), X(20)
                                                                           10
     DIMENSIUN GD(20)
                                                                     MISC
                                                                           11
                                                                     MISC
      EQUIVALENCE (PCCUR(05881), ACOE )
                                                                            14
     - EQUIVALENCE (DCCURT 03964), DELROS) ....
                                                                 ......... MISC ...
     EQUIVALENCE (UCCUP(170), W1F), (OCCUR(150), THET1F), (OCCUR(169), RN1F), MISC
                                                                           14
     1(OCCUR(147), M31.), (OCCUR(151), LAMD1F), (OCCUR(146), LAIF) MISC
                                                                            15
     EUUIVALENCE
                                                                           10
                                                             1. MISC
                     - 1, (JCCUR(134), THETAL), (OCCUR(135), RN1
    1(UCCUR(133),W1
                                                                           17.
                                                             1.
     2(UCCUR(136),R81 ),(UCCUR(137),LAMDA1),(OCCUR(138),LA1
                                                                      MISC
                                                                          .. 29...
    -3(UCCUR(139),W2 - --),(OCCUR(140),THETA2),(UCCUR(141),RN2 -.),.... MISC
     4(UCLUR(142),RB2 ),(UCCUR(143),LAMDA2),(OCCUR(144),LA2
                                                                      MISC
                                                                          ۷0
    - 510CCUR(145), 2TURN1
                                                                      MISC
                                                                            41
      EUUIVALENCE (OLCURI42),PI)
                                                                      MISC
                                                                            22
     EQUIVALENCE (OCCUR(3921), GD(1))
                                                                      MISC 23
C
                                                                      MISC
                                                                            14
                                                                    ..... MISC .... 25
.C
C
          AT PRESENT SUBROUTINE MISC CAN CALL SUBROUTINE PULCAL TO
                                                                   M15C 26
         CALCULATE THE FREE SPACE RADAR CROSS SECTION OF A VEHICLE.
                                                                           27 ..
         HOWEVER, THE FIRST THREE ARGUMENTS OF POLCAL HAVE BEEN GENERAL-MISC
C
                                                                            2 b
         IZED SO THAT ANY THREE ELEMENTS OF THE OCCUR ARRAY CAN BE USED. MISC
C
                                                                           29
         IT CALCULATES THE ELEMENTS OF THE GD ARRAY OF GENERALIZED MISC 30
      --- DIFFERENCES BETHEEN UP TO TWENTY PAIRS OF ELEMENTS OF THE
                                                                      MISC.
      CCCUR ARRAY. MISC IS INTENDED. IN GENERAL. TO PERFURM ANY TASKS WHICH DU NOT SEEM TO FIT READILY INTO ANY OF THE OTHER
                                                                     MISC
                                                                           32
                                                                    MISC
                                                                            33 ...
   SUBRUUTINES.
                                                                      MISC
                                                                      MISC. 35
                                                                      MISC
                                                                           30
   -- IF(-ICUM(7)+ICON(81+ICOM(9).NE.O) GO TO.30...
                                                                  ____ MISC _37.
      ANS = 0.00
                                                                      MISC
  ----- GU 170 40 til ym in andre in andre per merch american provide a se c
                                                                 ... . MISC
                                                                           39
C
                             MISC MISC
                                                                            40
                                                                            41
 30
    ID = ICOM(7)
                                                                     MISC
      DV1 = OCCURTION
                                                                   ____ MISC __ 43
      ID # ICUM(8)
                                                        MISC MISC
     ID * ICUM(8)
DV2 * DCCUR(10)
                                                                           44
                                                                            45
                                                            MISC.
      10 = 1COM(9)
                                                                           40
     DV3 = OCCUR(ID)
                                                                           47
CALL POLCAL'OVI.DV2.DV3.ICOM(4).ICOM(5).ICOM(6).2.ACOE,AVS) MISC MISC MISC
                                                                           48
                                                                           44
C
                                                                     MISC
                                                                           50
                                                                MISC
                                                                            51
      DO 111 J = 1, 20
      DO 111 J = 1, 20 MISC
1F(IGUH(J).EQ.O.OR.IGDL(J).EQ.O) GO TO 112 MISC
                                                                           54
                                                                           53
      GUIJI * OCCURITIONIJI) -OCCURITIOLIJI
                                                                     MISC
                                                                            54
     CONTINUE
                                                             55
      CUNTINUE
112
                                                                      MISC
                                                                      MISC
                                                                           57
C
                                                                      MISC
                                                                            58
C
                                                                      MISC
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DO 11 1 = 1, 8
                                                                                                                                                                                MISC
                                                                                                                                                                                               60
              IFIL.GT.61 GO TO-11.
                                                                                                                                                                                MISC
                                                                                                                                                                                               61
              DIFILL . 0.00
                                                                                                                                                                                MISC
                                                                                                                                                                                                62
              RATIO(1) = 0.00
                                                                                                                                                                                MISC
11
                                                                                                                                                                                               63
              TR = .17453293U-1*THETA1
                                                                                                                                                                                MISC
                                                                                                                                                                                                04
              R # RNL+UCOSITRI
                                                                                                                                                                                MISC
                                                                                                                                                                                                65
              H = RN1 + (1. DO-DSIN(TR))
                                                                                                                                                                               MISC
                                                                                                                                                                                                66
   V1=P[*[H*H*[RN1-H/3.DO]G[LA1=H]*(RB1*(RB1GR)GR*R)/3.DO]
                                                                                                                                                                   MISC.
                                                                                                                                                                                               67
                RATIO(7) * WL / V1
                                                                                                                                                                               MISC
                                                                                                                                                                                                60
               IF(ZTURN.LE.O.DO) GO TO 200
                                                                                                                                                                              MISC
                                                                                                                                                                                               64
               TK = .17453293U-1*THETA2
                                                                                                                                                                               MISC
                                                                                                                                                                                                70
              R = RN2*DCDS(TR)
                                                                                                                                                                                MISC
                                                                                                                                                                                                71
              H = RN2 + (1.00 - DSIN(TR))
                                                                                                                                                                                MISC
                                                                                                                                                                                                72
               V2=PI+(H+H+(RN2-H/3.DO)&(LA2-H)+(RB2+(RB2&R)&R+R)/3.DO)
                                                                                                                                                                                MISC
                                                                                                                                                                                                73
                 RATIU(8) = W2 / V2
                                                                                                                                                                                MISC
                                                                                                                                                                                               74
              DIF(1) = W2 -41F
DIF(2) = THETA2 -THET1F
                                                                                                                                                                                MISC
                                                                                                                                                                                                75
                                                                                                                                                                                MISC
                                                                                                                                                                                               76
              DIF(3) = RN2 -RN1F
                                                                                                                                                                                MISC
                                                                                                                                                                                                77
                                                                                                                                                                                MISC
              DIF(4) = RB2_{\bullet} - RB1F
                                                                                                                                                                                               7 b
                                                                                                                                                      MISC
              DIFISI = LAMDA2 -LAMDIE ...
                                                                                                                                                                                                79
                                                                                                                                                                              MISC
               DIF(6) = LAZ -LAIF
                                                                                                                                                                                               60
               RATIO(1) = H2/W1F
                                                                                                                                                                              MISC
                                                                                                                                                                                               81
               RATIO(2) = THETA2/THETIF
                                                                                                                                                           321K
                                                                                                                                                                                               32
               IF(RNIF.NE.OZDO) RATIO(3) = RN2/RNIF
                                                                                                                                                                                                33
                                                                                                                                                                            MISC
               RATIO(4) = REZ/RB35
                                                                                                                                                                                               84
              . 05
                                                                                                                                                                             MISC
               RATIOIS) = LAZ/LAIF
                                                                                                                                                                                               86
                                                                                                                                                                         HISC
HISC
HISC
 200
               WRITE(6,1000) . (RATIO(1), I=1,8), (OIF(1), I=1,6)
                                                                                                                                                                                                57
                                                                                                                                                                                               88
 C
               DO 44 I # 1, 8 ...
               IFI1.GT.6) GU 70.44
                                                                                                                                                                               MISC
                                                                                                                                                                                                90
                                                                                     MISC HISC
              OCCUR(163900) * DIF(1).....
                                                                                                                                                                                               91
               OCCUR(163906) " RATIO(1)
                                                                                                                                                                               MISE
                                                                                                                                                                               MISC
 C
                                                                                                                                                                                                93
                                                                                                                                                                                MISC
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95
                                                 NA at
                                                                                                                                                                                 MISC 400
               END
                                                  A CONTRACTOR OF THE PARTY OF TH
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APPENDIA	N	NEUM
	IMPLICIT REAL*8(A=R+U=Z)	NEUP
	and the state of t	NEU
1 FEE F 11 B	ZZNI - XOR - XXI - XIR - XII - ITI	NEU
1		NEU
_	DIMENSION ZZNR(200.1) ZZNI(200.1)	NEOR
C		
, C		NEU:
C	SUBROUTINE NEUMAN CALCULATES FOR COMPLEX ARGUMENTS THE	NEU
C	NEUMANN FUNCTIONS OF INTEGRAL ORDER ZERO THROUGH THENTY-FOUR	ME U
on recei to immoon	FOR ARGUMENTS OF MAUNITUDE LESS THAN XL THE STANDARD POWER	NEU.
r.	SERIES IS USED TO CALCULATE THE NEUMANN FUNCTIONS OF ORDER Z	ERGMEU
- 4	A STATE OF THE PARTY OF THE PAR	E NEU
Č.	AND ONE. MEUMAN CALLS IN RLUMNO AND NEUPAL TO CALCULATE TH	ես ինևակին Քն. հենքում
C	POWER SERIES FOR THE ZEROTH AND FIRST ORDER FUNCTIONS. RESPE	C# . MEUI
C	TIVELY. FOR ARGUMENTS GREATER THAN XL AM ASYMPTOTIC SERIES	1200
C	USED FOR BROOKS ZERO AND ONE. MOUTAN CALLS IN MEUTPO ARE	!!CU!
C C C	NEUMON TO PERFORM THE CALCULATIONS USED IN OBTAINING THE ZER	UTHREU
č	BRDER FUNCTIONS AND DIVIALT CALCULATES THE FIRST BROFR FUNCTI	MMSI EU
	BY ASYMPTOTIC SERIES. A FURMULA IS THEN USED TO GENERATE E	ACHNEU
-	INCREASING ORDER UNTIL THE NTH PROBER IS DETERMINED.	MEU
	THEREWOLDS DUILE THE HILL THREE TO METERGED	MEU
C		
C	ми ком 196 — п. надат мадентори дактори до раз	NEU
4	D=DSQRT(XR*XR+X1*X1)	NEU
	IF (D)8,10,8	- NEU
10	ZZNR(1.1T)=0.000	HEU
	ZZNI(1.IT)=0.UD0	MEU
DE PER L	ZZNR(2,[T]=C,0D0	NEU
	ZZN1(2,IT)=0.000	NEU
of the property of the contract to the ter-		NEU
	G0 T0 11	NEU
	CONTINUE	
C		NEU
	IF (D-XL)1:1:2	NEU
C		74E Q
C	NEUMANN FUNCTION CALCULATIONS FOR LARGE X	NEU
and a second second second	CALL MELLOPICAN VIACADAN PAIL	NEU
	CALL REUMQOIXR.XI.C.GNR.QNI)	NEL
Jack and Automatic Benchman		NEU
		HEU
and treatment one of	P12RT=DSORT12.0D0/3.1415928001	
	PI2RT=DSORT[2.0B0/3.1415926D0]	MEC
	CIMPREDCIMIXIP)	NEL
	C#5RP=OCOS(XRP)	NEC
	E=DEXP(X1)	NE 1
ide i distant <del>dalla</del> t him <del>mod</del> ti dai	C()51H=  E+1.000/E1/2.000	NEL
	51HHH=[E-1.UD0/E)/2.0D0	NEL
all the fat specific to		NEL
	CUSR#COSRP#COSIH	NEL
-	SUBJE-STURP*STARM	
	SINR=SINRP*COSHH	MEL
Harrist Land	SINI#COSPP*SINIH	HEI
	0R=XR/D**2	REL
	PI=-XI/D**2	NEL
Harter and the Harter	The control of the second seco	HEL
1941	1F (XI)6+5+6	1141
5	XIR=DSQRT(CR)	NEI
	was timber made	ME
  बुक्का  विकास   विकास	AND THE RESIDENCE OF THE PARTY	NE
	GO TO 7 S THICHATANOR(01.0R) RU-DSGRI(DSORT(01*01+0R*0R)) X0RRODCCS(THT0/2.0D0)	
hall have departs the behalistic of	THITCHATANOR(DI.OR)	NEW NEW
	Ra=DSCRTIDSCRT(W1*W1+WR*WR))	NE
	XWR==RM*DCUS(THT0/2.0D0)	MEI
<del>realists dealers allocated to be a loss (decents to be a loss</del> )	XUI *** ND *DS LII ( THI U / Z • U D U )	I t E i
	7 ZNIAR=ONR*CVSR-UNI*CUSI+PNR*SINR-PNI*SINI	MEL
	ZMINI=OMI*COSR+OMR*/USI+PMI*SINR+PMR*SINI	NES

ZANR(1+IT)=PI2RT*(XOR*ZNINR-XOI*ZNINI) -ZUI(1+IT)=PI2RT*(XOI*ZNIRR+XOR*ZNINI) -XORZZNUNI+IT)**XIR-ZUI/I+XOR*ZNINI)	NEUMA 61
XUNI = Z7NI (1 + IT) # XIR + ZZNR (1 + IT) * X1I - 2 • 0D0/8 • 1415926D0 * Z1 CALL DIVMET (XUMP * XUMI * YOP	MEUMA 64
CALL DIVMLT(XUMR+XUDI-XCR+XOI+ZZNR(Z+IT)+ZZNI(Z+IT))	NEUMA 65
The state of the s	_NEU/IA_66
:	NEUMA 67
NEUFANN FUNCTION CALCULATIONS FOR SMALL X	<u> Neuros</u>
I CALL DEBANOTAR AND AND AND A VOL. VALUE AND	NEUMA 60
CALL REUFHI(XR,XI,XIR,XII,ZZNR(2,IT),ZZNI(2,IT),C)	NEUHA 70.
No.	NEUMA 71
3 C=XSe45+X14X1	JIEUGA 72
XXXXXX	NEUMA 73 NEUMA 74
X [ D = - X ] \ ()	NEUMA 75
11 [//=/+]	MEUMA 76
· · · · · · · · · · · · · · · · · · ·	NEUNA 77
XXX:=DFLCAT(I-2) 1:2=1+2	MEUMAL 78
	NEUMA 79
	REUNA NO
22NR(1,(T) = 2.0D0 = XNN = (ZZNR(IM.IT) = XRU-ZZNI(IM.IT) = XIB) - ZZNR(IM2.	NEUMA 81
11T) 4 .:L::!(1,1T)=2.000*XNN*(ZZNR(1M.IT)*X16+ZZNI(1M.IT)*XRB)-ZZNI(IM2,	NEUGA 32
	NEUMA 83
CL_T(CC)	_NEUHA_84
	NEUMA 85
The contraction of the contracti	NEUMA 86
	Control Section Control Section 1995
	CIRI
	CIBL
	CIBL
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	CIBL
NOT REPRODU	CIBL
INOT REPRODU	CIBL
INOT REPRODU	CIBL

	NEUMP.	
IMPLICIT REAL*B (A-H,O-Z)	NEJMP	2
BROUTINE NEUMPO(XR,XI,C,PNR,PNI)	NEUMP.	. 3
MENSION SR(2).SI(2)	NEUMP	4
RESECTION OF THE PROPERTY OF THE RESECTION OF THE PROPERTY OF		5
SUBROUTINE NEUMPO CALCULATES THE REAL AND IMAGINARY COMPU-		6
		B
y		9
AP5=6		
XK**SEX [**S-0 - commercial to the second contract of the second con		***
=1.00/0	NEUMP	7.5
=-2.00+XK+X1/0+#2	NEJMP.	1.3
(1)=1.000		Mr.
(L)=0.000 - 1, max m 11645m m of 1200 m 1200		
.(2)=1.065		
R=0.000		
1=0.000	NEUMP	L ii
	. NEJMP	79
1 1=1,32000	NEUMP	40
(MOD(1,2))3,2,3,	NEUMP	21
=1	NEJAP	22
2 5 8 C Section to the Control of th		
TO 4		
2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
ì		
र ता । १३ वे रागा राज्यस्थितः । वे विशेष प्रत्येशस्य ता गाव्यस्थानाः । एकत् ता विश्वतः । । । । । । । । । । । । । । । । । । ।		
IR=PNR&SR(M)		
(UABS(SR(1)-SR(2))-C15,5,6		
(CABS(S1(1)-S1(2))-C17,7,6		
=2.U0*XB+1.U0		
NULT=-1.DO/(XB-1.DO)+(XT-2.DO)++2/X8+XT+XT/64.DO	NEUMP	34
({	MEJMP	33
(MM) = XMULT = (SR(M) = RIESI(M) = RR)	NEUMP	30
LITE (LTAPS, 1000), mile a constitution of the company of the control of the cont	NEUMP	. 31 -
JRMAT 147H SERIES NOT CONVERGED IN 32000 ATTEMPTS FOR POI	NEUMP	38
நகழ்தும் நடித்தியார் அடா இகை அக்கும் இருவர்களும் உள்ளார் காருக்கார் படிடாம்	NEUMP	39
INTINUE	NEUMP	40
TENNET TO THE PERSON OF THE PE	. ITE OIL	7.6
ND	NEUMP	-
	SUBROJINE NEUMPO CALCULATES THE REAL AND IMAGINARY COMPU- NENTS OF THE P-COMPONENT-OF THE ZEROTH GROER NEUMANN FUNCTION NIP, U).  AP5=6  XX**26X1**2. =1.00/D =-2.00*XX*XI/D**2 (1)=1.0E0 (1)=0.000 (2)=1.0E5 R=0.0D0 1 [=1,32000 (MOD(1,21)3,2,3- =1 2 TU 4 =2 1 IR=PNR&SR(M)  I=PNI&SI(M) (UABS(SR(1)-SR(2))-C)5,5,6 (GAUS(SI(1)-SI(2))-C)7,7,6 ==CFLOAT(2*I) =2.LD*XB-1.DD NLT=-1.0D/(XB-1.DO)*(XT-2.DO)**2/X8*XT*XT/64.DD NLT=-1.0D/(XB-1.DO)*(XT-2.DO)**2/X8*XT*XT/64.DD NLT=-1.0D/(XB-1.DO) NLT=-1.0D/(XB-1.DO) NLT=-1.DO/(XB-1.DO)*(XT-2.DO)**2/X8*XT*XT/64.DD NLT=-1.0D/(XB-1.DO) NLT=-1.DO/(XB-1.DO)*(XT-2.DO)**2/X8*XT*XT/64.DD NLT=-1.DO/(XB-1.DO) NLT=-1.D	SUBROJTINE NEUMPO CALCULATES THE REAL AND IMAGINARY COMPU- NENTS OF THE P_COMPONENT_OF THE ZEROTH_ORDER_NEUMANN FUNCTION NEUMP NIP, Q).  AP5=6  AP5=6  XX**26XI**2.  =1.00/D =-2.00*XX*XI/D**2.  1.00/D =-2.00*XX*XI/D**2.  1.000  NEUMP N

```
CNEUMO
        IMPLICIT REAL +B (A-H, 0-Z)
                                                                         NEUMU
      SUBROUTINE NEUMQO (XR, XI, C. QNR, QNI) ........
                                                                         NEUMU
      DIMENSION SR(2), SI(2)
                                                                         NEUMU
C
                                                                         NEUMU
\mathbb{C}
           SUBROUTINE NEUMOO CALCULATES THE REAL AND IMAGINARY COMPO-
                                                                         NEUNU
         NENTS OF THE Q COMPONENT OF THE ZEROTH ORDER NEUMANN FUNCTION NEUMANN
C
C
         N(P,Q).
                                                                         NEUMA
      LTAP5=6
                                                                         NEUMU 10
      D=XK++26X1++2
                                                                         NEUMU 11
      TNR=XR/D
                                                                         NEUMU 12
      INI=-XI/D ...
                                                                       ET NWITH ""
      RR=1.00/D
                                                                         NEUMU 14
      KI=-2.00*XR*X1/D**2.....
                                                                         NEUMU 15
      SR121=1.065
                                                                         NEUMU LO
      UNR=0.0DO
                                                                         NEUMU 17
      GGO.U*INU
                                                                         NEUMU 18
      SR(1)=-.12500*TNR....
                                                                         NEJMU 19
      SI(A)=-.125DO#TNI
                                                                         NEUMY 20
C
                                                                         NEUMU 21
      DU 1 1=1,32000
                                                                       NEUMU 23
      IF (MUD(1,2))3,2,3 .......
    2 MM=1
                                                                         NEUMU 24
     . M=2
                                                                 ____ NEUMY 25
      GU TO 4
                                                                         NEUMU ZO
    3 MM=2
                                                                         NEUMU 27
      M=1
                                                                       . NEUMU 29
C
                                                                        NEUMU 29
    4 ONR UNRESRIM
                                                                         NEUMU 30
      UNI=UNIESIIM) .....
                                                                         NEUMU SI
      IF(DABS(SR(1)-SR(2))-C)5,5,6
                                                                         NEUHU 32
5
      IF(DAHS(SI(1)-SI(2))-C)7,7,6 ....
                                                                         NEJMJ 33
6
      XB=DFLDAT(2+1)
                                                                        NEUMU 34
      XT=2.00*X861.00
                                                                 MEUNG 35 ...
                                                             NEUM 37
      XMULT=-1.00/XB+XT++2/(X861.001+(XT-2.00)++2/64.00
                                                                         NEUMO 36
      SR(MM)=XMULT+(SR(M)+RK-SI(4)+RI)
    1 SI(MM)=XHULT+(SR(M)+RIGSI(M)+RR)
                                                            NEUMU 38
NEUMU 39
NEUMU 40
      WRITE (LTAPS, 1000)
 1000 FURMAT (47H SERIES NOT CONVERGED IN 32000 ATTEMPTS FOR QO)
C
                                                                        NEJMU 41
    7 CONTINUE
                                                                        NEUMU 42
   - KETUKN ....
                                                                       .. NEUMU 43 ...
      END
                                                                         NEUNU 44
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1-671

CNEUMO		NEUHO	1
	IMPLICIT REAL®B (A-H,O-Z)	NEU: 10	
	SUBBRUTINE NEUMNE (ZR. ZI. XR. XI. ZNR. ZNI.)		
]	(1)	NEULO	
	OTHENSION SR(2) -51(2)	NEUHO.	G
rie.		NEUMO	
C	SUBROUTINE NEUMNO CALCULATES THE REAL AND IMAGINARY COMPRE-	NEUHO.	
Ç	NENTS OF THE OTH WROER NEUMANN FUNCTION FROM THE STANDARD POWE	IRNEU/10	Ł
C	SCRIES.	MEUMO	) Marian
C		MEURIO	
	LTAP5=6	LIMEUMO	1
	DATA P1/3-141592653539793/	NEURIO	1.2
	R=DSORT(ZR*#2+Z1*#2)/2.00	NEUMO	1:
	RLG=DLCG(R)	NEUMO	10
		NEUHO	1.
H = 4 b	ZNR=(.5772156600C+RLG)*XR-THET*X1	MEURO	10
		NEURO	1
	FACT=1.DU	HEUMO	1.
		NEUMO	1
i Hi is	SR(1)=1.065	NEURIO	
	SI(1)=SR(1)	NEUMO	
	And the state of t	NEUNO	2
**	00 1 1=1.32400	NEUMO	2
	JF (MOD(1.2))2.3.2	NEUHO	
4		NL UMO	2
	(4), 10 4	MLUHIO	2
-	2 = 2	NEUMO	
T messes second	1 * M** (00.1-)=0.08	REUHO	and the same of
-,	XX = 1	MEURIC	
	XM=XK*THET*2.DU	NE Un O	4 5
	TERP=R**XK	NEUMO	
10	SRIMI SULT TEMP/FACT) **2*DCOS (XN)	NEUMO	
	SI(N)=SUN-MITERP/FACT) **2*DSIN(XN)	NEUMO	
DI 19 1 19	21.3=21.R+SR173	NEUMO	and the state of the
	2/11=2/11+\$1((1)	MEUMO	
	IF (bA 5 (SR(2) - SR(1)) - C)5+6+6	NEU-	
4	IF(DABS(S1(2)-S!(11)-C)7.6.6	NEU/40	
45	XXI=DFLOAT(I+1)	NEUNO	
49	FACT=FACT*XXI	HEUMO	
an men pel lary	T#T+1.0. /XXI	NEUMO	
c ·		NEUFLO	
	7 ZMR#ZNR#2.DO/PI	NEUMO	446
	ZNI = ZNI + 2 . 00/PI	NEUMO	4
	NETURN	NEUM	
	END	NEUM	
epika ka <del>sees see</del>	Control Contro	anneall M. William	furani)
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ICIT REAL#8 (A-H+O-Z)		
	EUHI	ě
TUIF NEURNI IZROZI OXROXI OZIROZNI		-
	EUH1	1
10N_SR(2) • \$112)	IE LIGI	· ·
	EUH1	6
UBROUTINE NEUMNI CALCULATES THE REAL AND IMAGINARY COMPRE- 1	EURI	in anderstand
		r
THE RESIDENCE OF THE PARTY OF T	4 -m. marc	
A		
4 Company of the Comp		d deliberations
	1 Unil	_
000*(.577215660D0+RLG)*XI+2.00C*THLT*XR	IEUM1	1
12+21##2	IL Unil	1
1/3	LUM1	1
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The same of the sa		
AND THE RESIDENCE OF THE PROPERTY OF THE PROPE		
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MATERIAL A		
	the state of the s	.cara.
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	MEURI	4
	NEUMI	4
SERS+1.0J/P1+1.00/(P1+1.00)	NEUM1	" 1
	MELINIE	. 4
	MEURI	
THE Exploration of the First Method with the second	NEUM1	-
	KE UH 1	
NS	SUBROUTINE NEUMNI CALCULATES THE REAL AND IMAGINARY COMPREDICTION FROM THE STANDARD POWERS SERIES.  DATA PI/3:141592653589793/ SORTICER**2+ZI**21/2.DO  =DLOG(R)  T=ATANOR(ZI,ZR)  =2.000*(.577215660D0+RLG)*XR-2.0D0*THET*XI  =2.000*(.577215660D0+RLG)*XI+2.0DC*THET*XR  RE#2+ZI**2  =ZR/3  =ZIK-XNS*2.DO  TATELOG  TOTELOG	SUBROUTINE NEUMAL CALCULATES THE REAL AND IMAGINARY COMPREMENTATION FROM THE STANDARD POWERRCUMI SERIES.  DATA PI/3.141592653589793/ SEUMA NEUMAN FUNCTION FROM THE STANDARD POWERRCUMI NEUMAL NEUMAL SERIES.  DATA PI/3.141592653589793/ SEUMAN FUNCTION FROM THE STANDARD POWERRCUMI NEUMAL SERIES.  DATA PI/3.141592653589793/ SEUMAN SEUMAN FUNCTION FROM THE STANDARD POWERRCUMI NEUMAL SEUMAL

Mark H	THE DE THE SECTION OF THE PROPERTY OF THE PROP	NUSEB	1	
	IMPLICIT REAL +8 (A-H, U-Z) SUBROUTINE NOSEBL	NUSEB	2	
-	SUMMOUTINE NOSEBL	NUSEB	3	
C		NUSEB	4	
-	REAL . LANDA	NUSEB	5	
C		Mark Car		
N= 1-		NUNER	7	
C		NUSEB		part Hassel a
	EQUIVALENCE	NUSCE	-	
	LEUGCUREOGBIECUST :: OCCUREOGBIELAMOA :: COCCUREOSGIERNOCT ::	NUSEB	10	
	* ZIULCURIO601.R400T.I./OCCUR/OSA1.SINT I.	*****		
	31 OCCURTO FOI - XHAR I - (OCCURTO 91) - Z	NICE	3.7	
S-Heli		NULL	1 4	
C		MINER	1.6	1 16-
H +	COMMON OCCUR, NUCCUR	NUSED	1 6	
C		MUNIC	16	
C-	AND 1 MARK 1 No. 10 1 AND 1 NO. 10 NO.	MILLER	17	
C		MICHAEL	. 0	
_ C	SUBROUTINE NUSEBL OBTAINS DERIVATIVES OF NOSE RADIUS AND BAS	CMARKE	40	
Page 1	KANUSO WITH TIME IN UKUER III CALCULARA SJADE DJAMCE KOA	44.64 - 10	4. 83	- I made
C	CONSTANT CONE HALF ANGLE IN CONTINUUM FLOW. IN RAREFLED FLOW.	NUSES	20	
C	THE DERIVATIVES ARE SET EQUAL TO ZERO.	MUSEB	2.1	
C		NUSEB		
C	HNOST 15 CALCULATED SHOW STAC BOINT DECESSION DATE	NUSED	23	
-1144	RNOUT IS CALCULATED FROM STAG. POINT RECESSION RATE.	NUSEB	24	
	RMDOT=SDOT(1.11+SINT/(1.00-SINT)	MAPER	45	-1994/89
C		MOZER	-	
	BLUNTNESS MATTU LESS THAN OR = 1.00-3 IS TREATED AS A SHARP	NUSEB		
Č.	CHAS AND CHASE THAT OR SECRETAIN DATE OF A A SMARP			
č	CONE AND SHARP CONE SIDEWALL RECESSION RATES ARE USED. ULUNTNESS RATIO GREATER THAN 1.00-3 USES BLUNT CONE SIDEWALL	NUSEB	24	
Liebold.	TOP STORMALL			
~	IF(LAMUA.GT.1.0U-3)GO-TO 3	NUSED	21	rife o
C	11 franchist 11:00-3/60-30 3	NUSEU	32	
C		NUSEB	33	
-	TURBULENT SIDENALL RECESSION KATE PACTORS.	MUSEB	34	
	FERS. AT STOLETON OF THE CONTRACT OF THE CONTR	NOSER	35	
- 14	17344134 1831ER=0.3100L0=5D01(3.8)	NUS EU	36	
-	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	NUSED	27	
	101 24 24 14 11 En-0. (0/110 20011 2.8)	NUSEB	36	
-	GO TO 4	MUSEB	39	
-	GO TO 4  BLUNT CONE SIDEWALL RECESSION RATE FACTORS	NUSEB	40	
C	TURBULENT	NUSEB	41	
de altre conse	TURBULENT 	NUSEB	42	
. C	The state of the invitation of the state of	NUSEB	4.4	Pire with this of
H Hart	LAMINAR M SANIFIZ.GE.ZIRJIEM=SDOT(2.7)	NUSEO	44	
C	P 199 A F 1 C 4 OE at 6 K J 1 C P 3 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C D L 1 C	NUSEB	45	lest
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No. 1 miles	<del>е до меня картина в при при при при при при при при при при</del>	NUSEB	49.	*****
C	DEKTYATIVES ARE JERO IN NON-CONTINUIN SI 20	NUSco	50	
1	OEKIVATIVES ARE-ZERO IN NON-CONTINUUM FLOW	NUSEB	51	
	All Assets and the second seco	NUSES		
	RETURN	NUSEN	53	
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1 18	- C - D - D - D - D - D - D - D - D - D	NUSEB	55	( 10040 M00000 r)

C	SUBROUTINE PLT	PLT 2				
	SUBROUTINE PLT IS A DUMMY SUBROUTINE INCLUDED SO THAT CALLS TO THE AEROSPACE PLOTTER CAN BE SIMULATED.	PLT	4			
	- RETURN	PLT	6			
	END	PLI	8			
	the same of the sa		0			
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	PULCA 2
SUBROUTINE POLGALIX.Y.Z.NAX.NAY.NAZ.ITP.AGDE.ANS) IMPLICIT REAL+8-(A-II G-Z)	PULCA 3
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goodwar or (I the constitution of the constitu	PULCA 5
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	Marketta and the second
TRIPLE SUMMATION (   FROM 1 TO NAX, J FROM 1 TO NAY, K FROM 1	PUL A B
TO NAZ ) UF THE EXPRESSION - ( A(NAX*NAY*(K-L) CNAX*(J-L) CI)	PULCA 9
*X**([-1] *Y**(J-1] *Z**(K-1) ).	PULCA 10
and the second of the second o	PULCA 11
	PULLA 12
AND CONTRACTOR OF THE PROPERTY	
ANS=0.000 LF(ITP=1) 20,20,10	PULCA 14
[F(ITP=1) 20,20,10	PULCA 15
N. At A fit in his A. D.	Pulla in
GO TO 30	PULCA 17.
D NATURE	PULCA 18
0DO 130.K=1.NAZU	PULGA 19
MA THA INT NAM	PULCA 20
DO 130 I=1, NAX	PULCA 21
. 1 . 1 . A . A . B	POLLA 24
M=ME1[F(I-1) 40,40,50	PULCA 23
A 1-1 000	PULLA 24
0 A=1.000 	PULLA 25
-GU-TU-OU-	PHEGA 66
0 A=x++(1+1) 0 IF(J-1) 70,70,40	PULLA 27
0 [6(3-1) 70,70,40	PHENA EN
0 8=1.0D0	PHELA 29
00 10 14	PULLA 30
Q B=Y++(J-1)	
0 IF(K-1) 100,100,110	PÚLCA 32
0 C=1.000	
70 70 420	D C A D.
0 C=Z**(K-1)	POLCA 34
Billing.   Billings for the for the format of the state o	PULGA 33
O ANSHANS & ACCEEMS + A + B + C	POLCA 36
O CONTINUE	PULCA 38
Control of the first section of the control of the	
RETURN	PULCA 40
END part - the second of the s	PULLA 41
	page-lagging as on the second
We would be a companied to the companied	regions to pic or place on a comment to a co
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CPREL 1
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         IMPLICIT REAL*8 (A-H+O-Z)
                                                                                     PRELI
       SUBROUTINE PRELIM(LP)
                                                                                     PREIT
                                                                                             3
C
                                                                                     PRELI
       REAL *3 LAMDA, LA, MUINE, MINE, ME, M, MX, MY, MZ
                                                                                     PRELI
       REAL*8 MINE2, MINE3, MUE, MUW
                                                                                     PRFLT
C
                                                                                    PRELI
      DIMENSION A(514), TXCGD(56), TABZ(50), TW(4,8), TBMAT(3),
                                                                                     PRELI 8
                   OCCUR (4000), NOCCUR (30), THOEL7 (25), THTHO (25), THUELT (25)
                                                                                    PRELI
       CIMENSION TARRHOLSC) . TAB SND (5C) . TRATMZ (501
                                                                                    PREL I 11
       EQUIVALENCE
                                                                                     PRELI 12
      100CCUR(001).AREF
                           ), (OCC UR (COB), COST ), (CCCUR())91, CODRAGI,
                                                                                    PRELI 13
     2(OCCUR(:13), CAPL ), (OCCUR(:11), COSLAM), (CCCUR(:12), CNALP ), 3(OCCUR(:13), CMALP ), (OCCUR(:17), CPF ), (CCCUR(:18), CPW ),
                                                                                    PPELI 14
                                                                                    PRELI 15
      410CCURIOZUI, CMO
                           Frincour (c21) in
                                                   1.(CCCUR(027).G
                                                                                    PRILT 16
       FOUTVALENCE.
                                                                                    PREL I 17
     ILOCCURIO 287, GAMMA 1, LOCCURIO 291, HSR TO 1, LOCCURIO 311, HS
                                                                                    PRFLI 19
      210CCURE 0321. LAMBA 1, LOCCURE (331.LA
                                                   ) . (OCCUR (334) . MUINE ).
                                                                                    beil I lo
      SCOCCURTU351.MINE
                          1. (CCC LP ( C36) , MF
                                                   1.(CCCUR(^37).M
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     4(DCCUR(042),01
                            1, COCCURICAE) , PINEOS) , (CCCURICAT) , DS
                                                                                    PPFL 1
                            1, (CCCUR(U49), PINE ), (CCCUR(U51), 00
     SCOCCUR((49), PE
                                                                                    PRELT
     COOCCUR(L52), RN
                           1, (DCC LR (053), RB
                                                   ), (CCCUR(054), RESINT)
                                                                                    PRELI 23
       SOUTVALENCE
                                                                                    PRFL 1 24
     ICOCCUR(055), RHOINE), COCCUR(C56), RHOINI), CCCUR(O57), R
                                                                                    PREL 1 25
      STUCCURECALL, RHOS
                           1. (DCCUR (C62) .REYL 1. (FCCUR (064) .SINT
                                                                                    PPELI
                                                                          1.
                                                                                           26
      BICCCUR ( 666), SOCOSTI, (CCC ER (C67), SINTH ), (CCCUR (C69), THETAU),
                                                                                    PP EL 1
                           ), (OCC UR (072), TINE
     ACCCORTG70), TANT
                                                  1 + (CCCUR(U76) , THETA ),
                                                                                    PRFLT 28
     5(UCCUR(079), TE
                           1,1000 LP (086), TIMER )
                                                                                    PREL 1 29
       EDUTYAL FROE
                                                                                    PRFL 1 30
     lfuccor(e92),v
                           1. ILCCURICES) . VS
                                                   ) . ( CCCUR (094) .W
                                                                                    PPFLI 51
     20 DCCURTERS).W.
                            1, (CCC LR (CEP) , XCPO
                                                  1. ( CCCUR(099) , X8ARST),
                                                                                    PRFL 1 32
                           1. (CCC UR (C91), Z
     2(HCCGP(CS)), XHAP
                                                   1+( CCCUR(092) , ZTR
                                                                                    PRELI 33
      41 DECUREOS4), COPEAM), LOCEUR LOSTE, DEL W
                                                   ) + ( CCCUR(126) + X8AR1 ) ,
                                                                                    PREL 1 34
     SIGCCUR(196), CMOIN 1, (CCCUR(1981,S
                                                   1 . (CCC)19(201) .TH
                                                                                    PRIL 1 35
      EDUTVALENCE
                                                                                    PRFL 1 36
     1(0)CCUR(204), WTH
                           1. (DCC UR (265) .204
                                                   ) + ( CCCUP (206) , ZOFF
                                                                                    PRELT 37
     2100CURT 2071, THE
                           F. (DCC UR (208) - TON
                                                   1 . ( CCCUR(2)9) . TOFF
                                                                                    BELL 1 38
      ?(UCCUR(210), MX
                           1. (GCC LR (211) . MY
                                                   1 . ( CCCUR (212) . MZ
                                                                                    PRELI 39
     4(UCCURT213), THINE 1. (FCC LR (214) , AE
                                                   ) + ( CCCUR (215) + CTHZET) +
                                                                                    PRFL 1 40
     STOLCHET 2161, CP SZET) + (UCC LR (217) , STH ZET) + ( CCCUR (218) , SPSZET) +
                                                                                    PREL 1 41
     6(OCCUP(219), DELY 1, (OCCUR(??(), DEL 2 ), (CCCUR(??5), HWBAR)
                                                                                    PP FL 1 42
       EQUIVALENCE
                                                                                    PPFL 1 43
     1 (CCCUR1224), DELW? 1, (CCCU21227) DELW3 ), (CCCUP1229) WTCTALL,
                                                                                    PRFLT 44
     ZIBCCUR(243), TRZ TR ), (BCCUR(244), RFYINF), (CCCUP(245), PTUTAL),
                                                                                    PRELI 45
     3(CCCURI247), UPANDZ), (CCCUR(24A) ,DN3A)Z)
                                                                                    PAFL I 46
       EQUIVAL FNC F
                                                                                    PRFL 1 47
     TOTAL SELLA
                          A(11), (CCC LP (0844) , TXCGO (1)),
                                                                                    PRFL 1 48
     200CUR(0994).
                       TABZ(11), (OCCUR(2644), TW(1.1)),
                                                                                    PRELI 49
     *(OCCURE 3568), TH THOC 111, (OCCUP (3593) , THOE LZ (11) .
                                                                                    PRELI SC
     4000008 (3618), THOSE T(11), (OCCUR (3643), TBMAT(1))
                                                                                    POFL | 51
      COUTVAL FROM
                                                                                    PRELI 52
     100CCUR(2721), TBATMZ(11), (OCCUR(3771), TABRHC(11),
                                                                                    PRFLI 51
     71 CCUR(3821). TAU SNO(1))
                                                                                    PRFLT 54
      FOUTVALENCE
                                                                                    PRILT 55
     ICTS CENTERA), MAXIAN), (NOCC UP (C7), LUPT ), (NOCCUR (98), TAT MUS),
                                                                                    PRILT 56
     FIRE COURTER). IKCMD ), INOCTUP (14) INPRINT) , INCCCUR (22) INTHRST).
                                                                                    PPFL 1 57
     3(NOCCUR ( 22 ), 1 D(8 ST)
                                                                                    PPEL 1 50
                                                                                    PREL 1 50
```

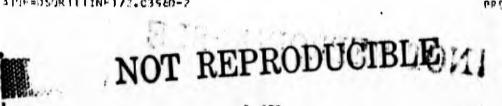
Jan Ch



## NOT REPRODUCIBLE

COMMON DECURANCE UR	PRELI	
c	PRELI	
	PRFL I	100 MW
C	bb LF 1	-
C SUBPOUTING PRELIM DUES PRELIMINARY CALCULATIONS OF GEOMETRI		
C FLOW FIELD, AND THRUSTING PARAMETERS.	PREL I	
C	PRELI	1000
c	L Jaka	67
C GEOMETRIC PARAMETERS.	PRELT	68
C CAPL = SHARP CUNE SLANT LENGTH , LA MOA=BLUNTNESS RATIO, CUSLAM=	PRELT	<u> </u>
€ COSINE OF THE TA+LAMDA, LA=AXIAL LENGTH FROM STAGNATION PUINT,	PRILI	70
AREFEARIA OF THE BASE, DEPASE DIAMETER, SESURFACE DISTANCE	PRELI	71
C FROM THE MOSE OF BLUNT CONE	PREL 1	72
	PPFLI	73
TEMT FM = 32.20 C+ 2.270 + 8	PRELI	74
CAPL =RP*RESINT	PRELI	75
L AMDA=FN/FB	PRELI	76
CUSL AM = COST+L AMDA	PREL T	77
1. A=C APL * ( COST-L AMDA* ( 1.DO- SINT) )	PREL 1	
AREF=PI*RB*RB	PPFL I	
C=2.00±03	PPFL 1	
S=HN+(C.SDC+PI-THETA) ERB+RC SINT-RN/TANT	POFLI	4.7 9.91.198
Switzer Countries In the Swy disparent of the Lights Switzer	PRELI	
CALCULATIONS FOR ACRO. COEFF. CN ALPHA, CMQ.CM ALPHA	PRELI	
C XCGD AND XCPD ARE THE DISTANCES OF CENTER OF GRAVITY AND	PRELI	
CENTER OF PRESSURE FROM THE NOSE NON-DIMENSICNALIZED BY THE	PRELI	1.00
C BASE DIAMETER.	PRELT	
CNAL P = 1.92 * SQCD ST* (1.DC-C.5DC *CCSLA M**?)	PRELI	
Lt = 1	PREL I	
XCG=D+TABLEIZ.TABZ.TXCGD.MAXTAB.LL)	PRELI	1 46 - 1
CMALP =- (2.00+(1.0C-COSLAM**3)-3.00+ SQCOST*COSLAM*(1.00-COSLAM**)		
1/( 3.00*TANT)	PRELI	
CMALP=CMALP+(RN-XCG) + SOCOST+(1.DO-1.5+COSLAP+COSLAP1/RE	PRELI	
CMAL PECMAL PELAMBA* SINT SOCO ST*(1. DO-COSLA P+COSLAP)	PREL 1	nen Mit in dender
CMALP=C.56+CMALP	PRELI	
IFICHALP.GT.C. DCILP=6.	PRILI	
IFICHALP GT.C.CDC FWR I TE (6-100C)	PRELI	
TUBE FURNATI THE LCX. 2CHCMALP GREATER THAN OF	PRELI	fat sheeks
IFILP.EQ. & DRETURM	PREL T	
XCPD=-CPALP/CNALP	PREL	99
X CP U=X CP UG TABLE ( Z . TAB Z . TXCGD . MA X TAB . LL)	PRELT	100
TEM COSLAM SQCOST	PRELI	101
IFLIKCHO GT.CICO TO 43	PRELI	102
the state of the s	PRFL I	103
CALCULATED CMO DE ING USED	PRELI	
CMO=-TEM+(TEN+(1.DO-COSLAM++2)-4.DU+(1.DO-CCSLAM++3)/3.Cu)/(SIN	THEPREL	105
(31)	PPELI	
CHO= CMO-C - SDC+(1 -DC-COSLAM++4) / (SINT+SINT)	PREL	1107
CMO=CMO=u+500+SQCDST+(CDSLAM+(RN-XCG)/R91++2	PREL	108
TEN=XCG-RN+(1.00-SINT)	PPELI	1108
CHO = CMOE 2.00*TFM*(2.0 C*(1.0 C-CD SLAM**3)-3.00*SQCCST*COSLAM*(1.0	O- PRELI	Ser no side
1 CHSL AND CHISLAND / LEADOWRH TANT)	PRFL 1	
CMU=C40-TEM+TEM+SQCUST+(1.00-COSLAM++2)/(R8+RB)	PRFLI	1.0
Сио≈п*деро∗сио	PRELI	
60 10 44	PREL	1000
	PRIL	
C INPUT CHO REING USED	PAFL	1
43 CHO = CHQ IN	bb ef	
AND CONTRACT TAXABLE	44. 54 May 1	
46 CONT INDE	PREL	1.0
The second of th	PREL	1.0
in the contract of the contrac	Net1 In	1.0
in the contract of the contrac	Net1 In	1.0
in the contract of the contrac	Net1 In	1.0
in the control of the	Net1 In	1.0
in the control of the	Net1 In	1.0
in the control of the	Net1 In	1.0
in the control of the	Net1 In	1.0
	Net1 In	1.0
	Net1 In	1.0

Ċ		IT LOPE 4 THE ERFE STREAM FLOW PARAMETERS ARE DETLAMINED FROM THE WIND TUNNEL INPUTS.	PROL		
		IF(LUPT.50.4)60 TO 75	ppr	1122	F
("			PREL		
		IFCIATMUS.GT.CIGU TO 47	PPTL		
Ç			PREL		
č		USING BUILT IN 1562 STANDARD A THOSPHERE	PRT		
~		CALL AS FOT 2(Z, A SOUND, PHO)	pert		
		(1) 1(1) 48	nort		
Ç	*		POPL		
Ę		USING INPUT ATMUSPHERE FOR SPECIFIED RANGE OF ALTITUDE AND	Do ef		
č		THE 1962 STANDARD A THOSPHERS DUTSIDE THIS RANGE.	port		
	47	CONTINUE			
	-7 1	CALL ENTERPETBATMZ, TABRHO, TAB SND, LPBNOZ, DNHNDZ, Z, 9HC, AS CUNE)	bb LF	- per 10- 1	
	430	CONTINUE	POFL	. (41	
. (		Mary 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	DB OL		
Č		CALCULATION OF FREE STREAM COMPLETIONS	DEEL!		
č		REYLA = FREE STEEAM REYMOLDS NUMBER RASED CA LA. TINE IS IN	PREL		
č		. DEGREES RANKING, MEINE IS IN LAMPICET-SEC). PHOINE IS IN	ppp		
č		SLUGS/FT**3, EHOINI IS IN LAM/FT**3, PINF IS IN LU/FT**2.	PREL		
č		ALL LENGTHS ARE IN FUET	PETL		
- "	+ ++	APRI = ASCURIT	PREL		
		PHUINT=5H1	PREL		
		RECINIERED INFO	PREL		
		CHORAG=CODEAH/PHOINI	PREL		
		TINF=AINF#AIMF#4.160-4	PREL		
		MUINE: TEMTEMATINE++1.500/(TIME &198.400)	PREL		
		RCYL A=PHOINI+V+LA MOINF	PREL	1147	100
		MINF =V/AIMF	PRILL	1148	
		MINE SEMIME #HINE	bb of 1	1140	
		MINF 3=MINF 2#MINF	burt ;		
		PINF=RHUIN I*P*IIM	PREL		
P 16	H 4 IP - IM	TIME TIMES	PRELI	1152	11960
_		CO' TO 89	PREL	. 6 1. 0	
C		CALCULATION OF COCC PARTY WAS NO ADDRESS WAS ASSOCIATED	bt el		
, C		CALCULATIONS OF FREE STREAM FLOW PROPERTIES FROM WIND TUNNEL			
· C		CONDITIONS INPUT.  9 EY INF IS THE REYNOLDS NUMBER PER INCH. PEYET IS THE	PRH.		
C		REYDULDS NUMBER PER FOOT. PTOTAL IS IN LATET ++2.	PRFL		
•	70	CONTINUE	PREL		
		MINE 2=MINE*MINE	onel :		
			PREL		
•		REYET=REVINE*12.	PRE		
		PINE =PTUTAL/((1.CDC&(GAMMA-1.CDC)+MINE2/2.0DC)++(GAMMA/(GAMMA-1.J)			
		16 ())	PRE		
- 1,	F 1 (8.89)	TTK 1=P INF*MINF/(2.C3SED-C2*R*TCMTEM)	PREL		
		TTK 2 = 198 + ADC = TTK 1	PREL		
		T2TK 1=TTK 1*TTK1	PREL		
		TTFACT#T2TK164.0DC#REYFT#TTK2	PREL		
,		IFITTFACT .LT.U. FDCIGO TO 55	PPFL	1160	
	H 400 II	TIPE TITK I GUSOR TITIFAC TITICE. CD C+RE YFTI	<b>PREL</b>	1170	1
		CO 10 D f	PREL	1171	. 1
		LP ITE( 6, 1059)	bb of		
3	USO	FORMATI 10x . 28 IN EGA 11 VE SQUARE ROOT IN TINE	PREL		
		LP = 6	opp.		
	6.7	RETURN COUT INVE	PRFL		
	2.6	PHINI*PINF/(R*TINE)	OUEL		
		RHOTALE MENCHALLER	boci		
		4116=D50RT(TINE)/2.03960-2	oball.	4. 14. 14.	
		THE STORM REPORT OF BUILDING PROPERTY.	4. In. 3" 1"	1 11 7 15	1



A## 1NE#VINE	PREC 1181
C	PRFL 1182
89 ILCOPTICE 3300 TO 16	PRFL 1181
IF (NT DRST. EQ. O) GO TO 16	DR 61 1194
The second secon	PRCL 1185
THRUSTING OPTION CALCULATIONS	PRFL 1186
GO TO (11, 12) NTHRST	PRCL 1197
an er cita is i known 2 i	
THRUST IS READ IN AS A FUNCTION OF ALTITUDE	POSLIIAA
	PRCL 7199
11 1F(12-ZDN).GT.1.D-4)GO TO 16	PREL ITO
1F(Z .LC.ZOFF 1GO TO 13	bb ef 1101
IFLIZ-ZUNI.GE.P. POCJKKTHR = 9	DB ef 1105
IF (KKTHR.FO.G.ANO.NPPINT.NF.C) WRITE (6.8222) Z	PREL 1193
2222 FORMAT(1HO, 25X, **** THRUST TURNED ON AT Z= *, £15.6. ****/15X. *TH	TE E DEDECT E LE
ILSSACE IS VALID ONLY WHEN IT IS IMMEDIATELY DEFCRE PRINTOUT(7)	7 7 ल मन् अस् अस
JJTHR = 0	PPFL 1196
KKTHR *KKTHRE1	PRFL 1197
CCL T42 = ZUN+Z	BB of 1108
Lt =- 1	PREL 1199
THINF THE TABLE COLLIAS, THOELZ, THING, THRST, LL)	PREL 1200
QU TO 14	PR EL 1201
were an order to the control of the	PREF 1505
C THRUST IS READ IN AS A FUNCTION OF TIPE	PREL 1203
12 1FICTIME-TON 1-L T-1-0-41GO TO 16	PR EL 1204
IFIT IME.GE.TOFF )GO TO 13	Pfi ft, 1205
IFI I TON-TIME I.GE.C.LOCIKK THR = G	PREL 1204
LFIKKTHK.EQ.G.AND.HPPINT.NE.O) WELTE 16,22231 TIME	PPCL 1207
2223 FURNATULHG, 25X. **** THRUST TURNED ON AT T1 *F=* ,F12.4.* ****/15X,	
IS HESSAGE IS VALID UNLY WHEN ET IS IMMEDIATELY BEFORE PRINTOUT	
JJTHC*3	PRFL 1210
KKTHR*KKTHRE1	POSL 1211
CFETAT * TIME - TON	PRFL 1712
LL = 1	PRFL 1713
THINE # THU TABLE COLL TAT, THOELT, THING, CHAST, LL	PPFL 1214
14 THETHINFHAREPTINE	PPCL 1215
TREATI 11 TH+C THIZE 1+CP SZE T	PREL 1216
THEATER THE THEFT SP SZET	PRFL 1217
TRMATE ?) =- THE STHZET	PREL 1218
NX™X CG-L ∆	LAET 1STA
MX*DELY*TBHATE31-0FLZ*TBMATE31	PPEL 1220
"Y*DELZ*TOMAT(1)-EX*TOMAT(3)	PRFL 1221
MZ#RXFIMMATE21-DECY+IRMATE1	PREL 1222
CO 70 10	BBLT 1553
	PR PL 1224
C THRUST PARAMETERS ARE ZEROED OUT WHEN NOT HET NO USED	PREL 1225
13 IFEGUTER ARE A ORDER TO 16	PRFL 1726
WKITEC6,22243TIME,Z	PREL 1227
2224 FIRMATI 110.25K. **** THPLST SHUT DFF AT TI ME=* .FL2.4.* ANC Z=*.	E15.6PMFL 1778
1. **** THIS MESSAGE IS VALID UNLY WHEN IT IS THE DIATELY	
PRINTOUT */ I THE PRINTOUT */ I THE TOTAL AS THE PRINTOUT AS THE PRINTOUT OF T	PP 61, 1230
	PR 8L 1231
LA AX W D 601	PPEL 1232
MY=4. CGO	PPEL 1233
MY WELL AT DA	PREL 1234
TBMATE 11+C.cnc	PREL 1235
TRHATE2)+0.CDC	PREL 1236
TBMAT(3)+0.COC	PREL 1237
The August 1000	PREL 1238
THINFAU JUNE	PRFL 1339



## INOT REPRODUCIBLE

```
KK THR #O
                                                                                        PRFL 1740
PRFL 1241
   L CONTINUE
C
                                                                                        POTL 1242
             CALCULATIONS FOR SHARP CONE EDGE PROPERTIES. STAGAATILA
                                                                                        PREL 1243
Ü
           ENTHALPY AND PRESSURE
                                                                                        PPEL 1244
       ESFT( = 1 C . 24DC+T INF620.LD-6+ V+ V) /33. 86D0
                                                                                        PREL 1245
       HS=37.9670*HSPTO
                                                                                        PRFL 1244
       PINEPS # 12.DC/ ( GAMMA 61.DC) * MINE 2
                                                   II ** (GAMMA/ (GAMMA-1.OUI)
                                                                                       PRFL 1247
       PINEPSAPINEPSALLP.DOWGAMMARMINEP
                                                   -GAMMAG1.D')/(GAMMAG1.CU)) **(
                                                                                      1PR 9L 1248
      1 V ( 0 x X
                                                                                        PPFL 1240
      1 CAMM A-1.0011
                                                                                        DR.FL 1250
       PS=P (4F/PIMFPS
                                                                                       PRFL 1251
       That . SCCOR HITTINEW VOV
                                                                                       PREL 1252
       OF YE BESEN IN TO VECAPL MILITE
                                                                                       DRFL 1253
       SINTHEMINERSINT
                                                                                       PREL 1254
       VE = V + SORTE 1.06-1.400 # SINTH**1.900/(MINES) )
                                                                                       PREL 1255
       PE=P 17 F# ( L. 0 362.80 0# SINTM# SINTM# (2.50 368.00 # SINTM )/ (1. UU416. CU#SINPPE 126
      XTM 11
                                                                                       PREL 1257
       JECS INTM . GF . 5 . 70 C) GO IN 1
                                                                                       PPEL 1250
       TET INF = 1.006 SIN TM+ LC. C9660 ( 80.2 2670 O+ SINT P)
                                                                                       PRIL 1250
       GU T11 2
                                                                                       PREL 1260
     1 TETINE=0.00
                                                                                       PPEL 1261
       CU 3 K=1.3
                                                                                       PRSL 1262
       医医血素 一九
                                                                                       PRFL 1263
       15UB 1#906 5*KK
                                                                                       PPEL 1264
       PTIM = (P1NF/2116.200)**KK
                                                                                       PRFL 1265
       CO 3 [=1,5
                                                                                       PPEI 1266
       1 | = 1 - 1
                                                                                       PREL 1267
       1500 = 1500 1611
                                                                                       PREL 1268
     TET INF = TET INFEA ( I SUB ) * ( SINTM * * I I ) * P TEM
                                                                                       PREL 1269
    ? TERTETINERTINE
                                                                  REPRODU
                                                                                       PRIL 1270
       RHOL=PE/(ROTE)
                                                                                       PRFL 1271
       "E = V FAR INF / (V+ SOR 1 ( TE 7 I NF ) )
                                                                                       PP SL 1272
      MUL TEMICHATERAL. SDC/( TEEL SR. 600)
                                                                                       PREL 1273
      ACYES=AMIE+VE+S/MUE
                                                                                       PREL 1274
C
                                                                                       PREL 1275
       IFITPETF . EQ . C. COCIGO TO 46
                                                                                       PFFL 1276
             TRANSITION ALTITUDE IS INPLT
                                                                                       PREL 1277
       ZTR = TRZTH
                                                                                       PREL 1278
       60 TO 45
                                                                                       PREL 1279
C
                                                                                       PREL 1280
            TRANSITION ALTITUDE IS CALCULATED
                                                                                       PREL 1291
   46 CONTINUE
                                                                                       PRFL 1292
       ZTR=C.DO
                                                                                       PREL 1283
      ro a J=1,2
                                                                                       PP EL 1294
      1-L=LL
                                                                                       PR FL 1285
       1800 1 = 3006JJ
                                                                                      PREL 1286
       TEMJ = CAPL + *JJ
                                                                                       PRFL 1287
       LO 4 1=1.2
                                                                                      PREL TORR
       11=1-1
                                                                                      PRFL 1289
       ISUNA ISUNTO POLL
                                                                                       DREL 1290
       TEM 1=1 FETAD** 11
                                                                                       PREL 1291
       !F( TELTAD. GT. 15. CDC) 'EMT +(15. CDC) ++ []
                                                                                      PRFL 1292
      DD # K = 1, 2
                                                                                      PREL 1293
      机机 电线 -- 1
                                                                                      PREL 1204
      15UH = 15UH 266+KK
                                                                                      PREL 1295
      TEMP -ACISTRY TEMP TEMP
                                                                                       PREL 1296
      TETL #LAMDA
                                                                                      PREL 1297
      TELL ANDA . GT . C. 30 CITEML . C. 30 C
                                                                                      PR EL 1298
      IF CHK .NE .: TEME .TEME TEME .KK
                                                                                      PRFL 1299
```

IF(Z .GE .ZTR )J=Z					
PRE 1302   PRE 1303   PRE 1303   PRE 1303   PRE 1303   PRE 1304   PRE 1305   PRE 1307   PRE 1306   PRE 1307			The state of the s	prof	1300
IF(Z, dF, Z)=2		45			
PRE  170.4   PRE  170.5   PRE	C	,	the same of the sa		, ,
CALCULATION OF CONSTANT PRESSURE SPECIFIC HEAT AT THE ELCL UPPER 1306 SHARP COME BOUNDAPY LAYFR  IFITH .GT.*GCO.DCICPF = ACIIII GAILI2)*TE  IFITH .GT.*GCO.DCICPF TO PART 1310  IFITH .GT.*GCO.DCICPF TO PART 1311  CPP=0.00  CO 5 1=1,6  II-1-1  CALCULATION OF CONSTANT PRESSURE SPECIFIC HEAT AT WALL  PER 1312  A IFITH (J, 81.4T.*TC.*CCCCTGO TO 6  CPP=0.00  CO 7 1=1,6  II-1-1  TOPE CONSTANT PRESSURE SPECIFIC HEAT AT WALL  PER 1312  CPP=0.00  CO 7 1=1,6  II-1-1  TOPE CONSTANT PRESSURE SPECIFIC HEAT AT WALL  PER 1322  CO 7 1=1,6  II-1-1  TOPE CONSTANT PRESSURE SPECIFIC HEAT AT WALL  PER 1322  CO 7 1=1,6  II-1-1  TOPE CONSTANT PRESSURE SPECIFIC HEAT AT WALL  PER 1325  CONSTANT TO PART 1321  PER 1326  PER 1327  PER 1326			ALEM BATE AND LOUGH TO		
CALCULATION OF CONSTANT PRESSURE SPECIFIC HEAT AT THE ELCL UPPER 1307  FITT . 50C0.001CPP = A(111) 6A(112)*TE  FITH.J. 3.50C0.001CPP = A(111) 6A(112)*TE  FITH.J. 3.50C.6CC.001CPP = A(111) 6A(112)*TE  FITH.J. 3.50C.6CC.001CPP = A(111) 6A(112)*TE  FITH.J. 7.70.001CPT**.235000  FREE 1310  FREE 1310  FREE 1310  FREE 1310  FREE 1311  FREE 1312					
SHARP COME POUNDAY LAYER   PREL 1377     If IT, GT. \$CCO.DCICPH = ACIDIT & ACIDIT	0	., ,			
SHARP COME POUNDAY LAYER   PREL 1377     If IT, GT. \$CCO.DCICPH = ACIDIT & ACIDIT	C		CALCULATION OF CONSTANT PRESSURE SPECIFIC HEAT AT THE EUCL OF	DB ef	1306
IFITE	ť.	*			
Filin   J. 9 J. GT. 5. CC. 40.   CP   FA (111) CA (112) *TW (J. 91)   PREL   1300   PREL   1300   PREL   1310   PREL   1310   PREL   1311   PREL   1312   PREL   1314   PREL   1312   PREL   1314   PREL   1325	•			PRIL	1308
IF(IT.LIT.760.00)CPT = .235000					
IFITION			The state of the s		
IFITE.OT.5000.00.00 TO 4		,	THE THE PARTY PROPERTY OF THE PARTY		
IFITE al T.700.00100 TO 4			Transfer to the contract of th		
CP=0.70  CD 5 1=1.6  CD 7 F=CP=CALLILATION OF CONSTANT PRESSURE SPECIFIC HEAT AT WALL  PREL 1315  CD 6 FERENCE OF CLOCK OF COME OF COM		4	TELLEGIE ALGORDANIA II A		
DO 5   1=1,6			Tringation and a	-	
			The state of the s		
### CALCULATION OF CONSTANT PRESSURE SPECIFIC HEAT AT WALL    CALCULATION OF CONSTANT PRESSURE SPECIFIC HEAT AT WALL   PREL 1310					
CALCULATION OF CONSTANT PRESSURE SPECIFIC MEAT AT WALL  4 IFITH(J, 0).GT.5CCC.COCIGO TO 6  4 IFITH(J, 0).GT.5CCC.COCIGO TO 6  5 PREL 1320  COPHED.OD  COT 1=1.6  11=1-1  7 CPH=CPHEAT ITETC5+TH(J, 0)**II  6 CONTINUE  PREL 1325  PREL 1325  PREL 1326  PREL 1326  PREL 1326  PREL 1326  PREL 1327  PREL 1326  PREL 1327  PREL 1328  PREL 1338  C CALCULATION OF XRAR, VISCOLS INTERACTION PARAMETER, USEO IN PREL 1338  C CHAUN*TE/IMUC*TH(J, 0)  RAM****AFREMFEMES SORT(GF/REYES)  C CALCULATION OF RAREFACTION PARAMETER USEO IN CETERPINING END PREL 1338  C NFE***AUN***TINF/IMULNF***IN(J, 0))  XBARST****INF**SORT(CINFV(RFYL**S/CAPL))/TISINT**SINT)  PREL 1339  XBARST****INF**SORT(CINFV(RFYL**S/CAPL))/TISINT**SINT)  PREL 1349  C DFL NZ=MEDIGHT LOSS DIE TO ABLATION, DELW3=WEIGHT LCSS DIE TO PREL 1349  C THRUSTING, DELW***TOTAL WEIGHT UP PREL 1344  CC THRUSTING, DELW****TOTAL WEIGHT UP PREL 1344  CC THRUSTING, DELW****TOTAL WEIGHT UP PREL 1344  CC THRUSTING, DELW************************************		1 4 1	1474		
CALCULATION OF CONSTANT PRESSURE SPECIFIC HEAT AT WALL  4 IFITM(J, 8) 3.CT.5CC.4CDC)GO TO 6  PREL 1327  CPW=0.DD  CD 7 1=1,6 11=1-1  7 CPW=CPMEAN (ILETCS)*TW(J, 8)**II  6 CONTINUE  PREL 1328  HABAR=CPW*TW,J, 8) / 33. E6DC  MULL=TEMTEN*TW(J, P)**1.5DC/(TW(J, 8) 6193.6DO)  C C CALCULATION OF XRAR, VISCOLS INTERACTION PARAMETER, USED IN PREL 1328  C C CALCULATION OF XRAR, VISCOLS INTERACTION PARAMETER, USED IN PREL 1332  C E=MULW*TE/IMUE*TW(J, E))  XRAW=MF*MF**MF**SORT(CF //FE YES)  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1332  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1333  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1333  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1335  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1337  PREL 13	_	j.	CPF=CPE&ACII&ICOFFEEFFIL		
4 IFITM(J, 8).6T.5CCC.6DC)GO TO 6	Ç	per tequely and			
	C				
CPM=0.DU	11 989	4	IFIIW(J, 8),61,500CL.00ClOU IU 6		
CU 7 1=1.6					
Ti=1-1			A STATE OF THE PARTY OF THE PAR		
7 CPM=CPM&A( 11&1C5)*TW(J, e)**II	17.7	-			
A CONTINUE		and the			
PREL 1327		7	CPH=CPN&A( II&1C5)**W(J*8)**II		
MBBAR=CPW*TM\J, 8)/33.86DC		6	CONT INCE		
C	C	- Matter (March 19			
C CALCULATION OF XBAR, VISCOLS INTERACTION PARAMETER, USED IN PRELIBIAGE C DETERMINING START OF CONTINUEM FLOW REGIME  C CHEMUNTE/MULETH(J.E))  XRAP = MF*MF*ME*SORT(GF/REYES)  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PRELIBIAGE C OF FREE MULFCULE AND THE START OF STRONG INTERACTION REGIME PRELIBIAGE C CHEMINET INF/(MUINF*)N(J.E))  XHARST=MINF*SORT(CINF*/(RFYL*S/CAPL))/(ISINT*SINT)  PRELIBIAGE C DFLW2=WEIGHT LOSS DLE TO ABLATION, DELW3=WEIGHT LOSS DUE TO PRELIBIAGE C THRUSTING, DELW=TOTAL WEIGHT LOSS, WIOTAL=TOTAL WEIGHT UF PRELIBIAGE C VEHICLE C VEHICLE CELW2=W-M CELW2=W-M CELW2=W-M CELW2=W-M TOTAL WEIGHT LOSS DLE TO ABLATION PRELIBIAGE WITHAL WG-DELW TOTAL			HWBAR=CPW*TW\J. 8) /33.86D C		
C CALCULATION OF XHAR, VISCOLS INTERACTION PARAMETER, USED IN  DETERMINING START OF CONTINUEM FLOW REGIME  CE-WUMATE/(MUC+Th(),6))  RRAW-HEF*ME*SORT(CF/REYES)  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END  PREL 1335  CIME-MUMATINF/AMUINF*16(J,6))  XHARST-MINF*SORT(CIMF*/(RFYL*S/CAPL))//(ISINT*SINT))  XHARST-MINF*SORT(CIMF*/(RFYL*S/CAPL))//(ISINT*SINT))  PREL 1336  C DEFUS-WEIGHT LOSS DIE TO ABLATION, DELW3-WEIGHT LOSS DUE TO PREL 1346  C THRUSTING, DELW-TOTAL WEIGHT LOSS, WIOTAL-TOTAL WEIGHT UF  C VEHICLE  CELW-WG-WH  CELW-WG-WH  CELW-WG-WH  CELW-WG-WH  CILW-DELW-WG-WH  CILW-DELW-WG-WG-WG-WG-WG-WG-WG-WG-WG-WG-WG-WG-WG		1	"MUN=TEM TEM *TU(J, P)**1.50C/(Th(J,8)&198.6D0)		
C CALCULATION OF XBAR, VISCOLS INTERACTION PARAMETER, USED IN PRFL 1337  DETERMINING START OF CONTINUEM FLOW REGIME PRFL 1332  CE WIND WAR TEXTING START OF CONTINUEM FLOW REGIME PRFL 1333  XARW = MF + MF * MF * SORT (CF / REYES) PR FL 1334  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C OF FREE MULFCULE AND THE START OF STRONG INTERACTION REGIME PREL 1337  CINF = MULM * TINF / (MUINF * TIN (J. 0)) OREL 1338  XBAR ST = M INF * SORT (CINF * (REYL * S/CAPL)) / (SINT * SINT) PR FL 1346  C C C C C C C C C C C C C C C C C C C	C				
DETERMINING START OF CONTINUEM FLOW REGIME  CEMUM*TE/(MUC*TA(J, E))  XBAW =MF*MF*ME*SORT(CF/REYES)  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERMINING END PREL 1335  C CALCULATION OF RAREFACTION PARAMETER USED IN CETERMINING END PREL 1336  C OFF FREE MULFCULE AND THE START OF STRONG INTERACTION REGIME PREL 1337  C CINF=MUM*TINF/I MUINF*TNF/I/EFYL*S/CAPL))/(SINT*SINT)  XBAR 1=XBAR ST*SINT*SINT  C PREL 1349  XBAR 1=XBAR ST*SINT*SINT  C IF(LOPT.EQ.31GO TO SI  PREL 1344  C DFLW2=WEIGHT LOSS DLE TO ABLATION, DELW3=WEIGHT LOSS DUE TO PREL 1344  C VEHICLE  CELW2=WG-W  CELW2=WG-WH  CELW2=WG-WH  CELW2=WG-WTH  CELW2-WG-WTH  CELW2-WG-WG-WG-WG-WG-WG-WG-WG-WG-WG-WG-WG-WG-	C.		CALCULATION OF XBAR, VISCOLS INTERACTION PARAMETER, USED IN	.,	
CF=MUN*TE/IMUE*Th(J, E)	C		DETERMINING START OF CONTINUEM FLOW REGIME	in .	
C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PRELIZAGE C OF FREE NULFCULE AND THE START OF STRONG INTERACTION REGINE PRELIZAGE CINF=NUM*TINF*(NUINF*Th(J,8)) PRELIZAGE C CONTENUM*TINF*(NUINF*Th(J,8)) PRELIZAGE XBAR I=XBAR ST*SINT*SINT PARE TO THE START OF STRONG INTERACTION REGINE PRELIZAGE XBAR I=XBAR ST*SINT*SINT PARE TO THE START OF STRONG INTERACTION REGINE PRELIZAGE C C C C C C C C C C C C C C C C C C C	th)	7 1		PRFL	1333
CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1335 C OF FREE MULFCULE AND THE START OF STRONG INTERACTION REGIME PREL 1337 CINF=MUM*TINF/(MUINF*Th(J,8)) PREL 1338 XHARST=MINF*SQRT(CINF*/REFYL*S/CAPL))/(SINT*SINT) PREL 1338 XHARST=MINF*SQRT(CINF*/REFYL*S/CAPL))/(SINT*SINT) PREL 1349 XHARST=MINF*SQRT(CINF*/REFYL*S/CAPL))/(SINT*SINT) PREL 1349 C			XBAP =MF *MF *ME *SORT(CF /RE YE S)	<b>BBEL</b>	1334
C CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END PREL 1336  C DF FREE MULFCULE AND THE START OF STRONG INTERACTION REGIME PREL 1337  CINF=MUM*TINE/(MUINF=Mk(J,8)) PREL 1338  XHARST=MINF*SQRT(CINF=(RFYL*S/CAPL))/(SINT*SINT) PP EL 1339  XBAR 1=XBARST*SINT*SINT* PREL 1340  C PP EL 1341  C IF(LOPI.EQ.3]GU TO SI PREL 1342  C DFLW2=WEIGHT LOSS DLE TO ABLATION. DELW3=WEIGHT LOSS CUE TO PREL 1344  C THRUSTING. DELW=TOTAL WEIGHT LOSS, WITOTAL=TOTAL WEIGHT UF PREL 1344  C VEHICLE PREL 1344  C CLW2=WO-WTH PREL 1344  C CLW2=WO-WTH PREL 1344  WITOTAL=WO-DELW PREL 1344  WITOTAL=WO-DELW PREL 1354  WE ITELE, 1091)WIDTAL  1:91 FORNAT(1HO,10X, '****** WARNING***** WITOTAL =*,E11.4*, 'IS NUT ACCEPT APREL 1355  C PREL 1356  C 91 CINTINUE PREL 1356  M=WITOTAL/G PREL 1356	C	M+ M#1 1 P**	the first of the f		
C OF FREE MULFCULE AND THE START OF STRONG INTERACTION REGIME PREL 1337  CINF=MUM*T INF/(MUINF*1h(J.8)) PREL 1338  XBAR ST=M INF*SQRY(CINF*/(RFYL*S/CAPL))/(SINT*SINT) PREL 1349  XBAR 1=XBAR ST* SINT* SINT  C IF(LOPT.EQ.3)GU TO S1 PREL 1349  C OFLM2=WEIGHT LOSS DLE TO ABLATION, DELW3=WEIGHT LCSS CUE TU PREL 1349  C THRUSTING, DELW=TOTAL MEIGHT LOSS, WTOTAL=TCTAL WEIGHT UF PREL 1349  C VEHICLE PREL 1349  C CELW2=WG-WTH PREL 1349  CELW2=WG-WTH PREL 1349  IF(V)UTAL=WG-DELW PREL 1349  IF(V)UTAL=WG-DELW PREL 1350  IF(V)UTAL=WG-DELW PREL 1		111	CALCULATION OF RAREFACTION PARAMETER USED IN CETERPINING END	PREL	1336
CINF=MUW*TINF/IMUINF*]%(J.8)  XBARST=MINF*SQRT(CINF/(RFYL*S/CAPL))7(SINT*SINT)  PREL 1338  PREL 1339  PREL 1349  PREL 1349  PREL 1341  PREL 1341  PREL 1341  PREL 1342  C DFLW2=WEIGHT LOSS DLE TO ABLATION, DELW3=WEIGHT LOSS DUE TO PREL 1344  C THRUSTING, DELW=TOTAL WEIGHT LOSS, WTOTAL=TOTAL WEIGHT UF PREL 1344  C VEHICLE  PREL 1344  PREL 1345  PREL 1345  PREL 1346  PREL 1356  C PREL 1356	ď	i nr	DE FREE MULECULE AND THE START OF STRONG INTERACTION REGIME	PREL	1337
XBARST = MINF * SQRY (CINF / (RFYL * S/CAPL)) / (SINT * SINT)			CIME=AUW+TIME/(AUIME+16(J.8))	PREL	1338
XBAR 1=XBAR ST* SINT* SINT*   PREL 1340	+		XHARST = MINF + SORT (CINF V (REYL+S/CAPL)) / (SINT+SINT)	PPEL	. 1339
PRELICATION	1			PREL	1340
IF (LOPT.EQ.3)GU TO SI	C	н •	ւ իր լարույի անագրան անագրանի արդանական հայ հայ հայաստանի հայաստանի հայաստանի հայաստանի հայաստանի հայաստանի հայ Հայաստանի հայաստանի հայ հայաստանի հայաստանի հայաստանի հայաստանի հայաստանի հայաստանի հայաստանի հայաստանի հայաստա	PREL	1341
#### C			IFILOPT -EO -31GU TO S1	PREL	1347
C THRUSTING, DELW=TOTAL WEIGHT LOSS, WTOTAL=TOTAL WEIGHT UF PRELICASE  C VEHICLE PPGL 1346  CELW 2=W0-WTH PRELICASE  WTOTAL = WC-DELW PRELICASE  IF CW TOTAL = WC-DELW PRELICASE  WRITEL 6, 10 51 MTOTAL PRELICASE  1301 FDRWATT 1H0, 10X, "****** WARNING***** WTOTAL = ",E11.4" IS NOT ACCEPT APRELICASE  131.6" PRELICASE  C 91 CONTINUE  M=WIOTAL /G PRELICASE	C	+ill )	A TAIT IN THE CONTRACT OF THE		
C THRUSTING, DELW=TOTAL WEIGHT LOSS, WTOTAL=TOTAL WEIGHT UF PRELICASE  C VEHICLE PPGL 1346  CELW 2=W0-WTH PRELICASE  WTOTAL = WC-DELW PRELICASE  IF CW TOTAL = WC-DELW PRELICASE  WRITEL 6, 10 51 MTOTAL PRELICASE  1301 FDRWATT 1H0, 10X, "****** WARNING***** WTOTAL = ",E11.4" IS NOT ACCEPT APRELICASE  131.6" PRELICASE  C 91 CONTINUE  M=WIOTAL /G PRELICASE	č		DELW2=WEIGHT LOSS DUE TO ABLATION. DELW3=WEIGHT LCSS DUE TO	PREL	1344
C VEHICLE PPEL 1346  CEL W 2 ** W 5 - W TH PREL 1347  CEL W 2 ** W 5 - W TH PREL 1346  UTOTAL ** W 6 - DEL W PREL 1346  WE OF ALL ** W 7 - DEL W PREL 1356  IF CHIUTAL ** GT ** C ** OD C Y GO TO 91  WE IT FL (**, 10 **) W TOTAL PREL 1356  13 LE* )  C PREL 1356	Č	-		PRFL	134
CELH 2 ** WO-WTH	ř				
CELK 2=W0-WTH		1 4	The state of the s	PREL	1347
C					
######################################	day	Made ab	to the state of th	PRF	1340
IF (H   UTAL . GT . C. OD C) GU TO 91  PR FL 135:					
RECORD   PRESSET   PRESS					
1301 FDRNAT( 1HO, 10X, ************************************			SPITSIA, ICCINITAL	POFE	1352
19LE*) PREL 1354 PREL 1354 PREL 1354 PREL 1355 PREL 1355 PREL 1355 PREL 1357	il.		CODY THE THE TOY I THE WALL AD NI NEW WAR WE WINTED HE SELL ALL TO ALL ACCEPT	APRE	175
PREL 135'		1 1			
PREL 1350 PREL 1350 PREL 1350 PREL 1350 PREL 1350	<b>H</b>				
PREL 135  M=NTOTAL/G  PREL 135			mr r		
M=NTOTAL/G PREL 1356	C	HI1193	p analysis of the second secon	•	
The state of the s			1 GUILLING		
RETURN SEPTIME					
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INOT REPRODUCIBLE

END PPFL 1360

FUNCTION RANDOM(X) [MPLIGIT-REAL+8 (A-H,U-Z)	RANDO 3
A construction when a state of the construction of the constructio	RANDU 5
SUBROUTINE RANDOM IS A DUMMY SUBROUTINE.	RANUO 6
RANDOM * X	RANDU 8 RANDU 9 RANDU 10 RANDU 11
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HITTO COLUMN

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CRESSE.
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                SUBROUTINE-RCSECIBL-INET-WAKEL-SIGP-AOPT)...
                                                                                                                                                                       - MLSEC
                                                                                                                                                                                                                   4
                 IMPLICIT REAL+8(A-H,O-Z)
                                                                                                                                                                                                RISEL
                COMMON OCCUR.NUCCUR
                                                                                                                                                                                              RLSEL
                CUMMON /CRCSEC/ F.TAU.SIGNOS, PHI. XBZ. ZME, HH. DDW. C1, C2, C3, C4, C5
                                                                                                                                                                                                KESEC
             - COMMON -/ DRCSEC/ BZERO - 82,83,8THEN - 824, DX-Z NUS-CNE-DSB - X2800 - X38, - K25EC . 7.
              LIND2 . NSTWL
                                                                                                                                                                                                MISSEL
                                                                                                                                                                                                                   H
                CCMMON /CSIG/ XTT.WS1.XODP.DHST.SPH2.XLMS.XMSP.XSSP.CB1.ZCR2.ZCR4.RLSEL
              1X820.DWBSTL,SPH4,B0,CDDW,WS4,C1GMDS,INDD
                                                                                                                                                                                                RESEC 10
                DIMENSION OCCUR(4000) NCCCUR(30)
                                                                                                                                                                                                RUSEC 11
                EQUIVALENCE (OCCURT 4000).LP)
                                                                                                                                                                                                KUSEU IZ
C ....
                                                                                                                                                                                                RESEL 13.
C
                                                                                                                                                                                                K-Sch 14
                     SUBROUTINE ROSEC COMPUTES THE RACAR CROSS SECTION AND PULSE HOSEC 15 SHAPES FROM THE GIVEN OBSERVING RADAR AND THE TRANSITION POINT ROSEC 16
              ELECTRON DENSITY OF THE VEHICLE AND ALSO COMPUTES MAKE LENGTH. RUSEL 17
                                                                                                                                                                                               RESEC 46
                                                                                                                                                                                             RUSEC 19
                                                                                                                                                                                                ACSEL 20
                                                                                                                                                                                               RUSEC 24
     - - INDZ=0 - NJ OUTPUT GENERATED BY THIS ROUTINE.
                  IND2=1 - INTERMEDIATE STEPS PRINTED OUT
C
                        ALTITUDE INDEPENDENT QUANTITIES
                                                                                                                                                                                               RUSEC ZJ
C
                          SCALING CUNSTANTS - BZERU, BZ.B3.BTHEN, BZ4
                                                                                                                                                                                               RUSEU 24
                           SCALING CONSTANTS - X80.82.83.X820,824 ...
                                                                                                                                                                                   ..... RCSEC 25
                            FREQUENCY - F
                                                                                                                                                                                               RCSEC 20
                   PULSE LENGTH - TAU
                                                                                                                                                                                              RCSEL 27
                    SEA LEVEL COLLISION FREQ. - ZNUS
PRESET CUNSTANTS - C1,C2,C3,C4,C5
                                                                                                                                                                                            KUSEC 26
                                                                                                                                                                                            RISEC 49
                             NOISE LEVEL TO WHICH WAKE LENGTH IS MEASURED - SIGNOS
                                                                                                                                                                                               ROSEC 30
            STEP IN AXIAL CUURUINATE - UX
                                                                                                                                                                                               MISEL 31.
                           MAXIMUM NUMBER OF STEPS USED TO COMPUTE WAKE LENGTH - NSTHE RCSEL 32
                ALTITUDE DEPENDENT QUANTITIES
                                                                                                                                                                                               KESEL 33
     ALTITUDE - HH
MACH NUMBERLUPSTREAM) - ZME
                                                                                                                                                                                               RESEC 34
                                                                                                                                                                                          . RLSEC 35
            LUCK ANGLE -- PHI
                                                                                                                                                                                               HISUE 36
              SCALE HEIGHT - XBZ ROSEC 36

TRANSITION POINT ELECTRON DENSITY - ZNET ROSEC 39
C
¢
                                                                                                                                                                                     ... KCSEC . 39
              2 BUDY OVERDENSE LENGTH - X2BOD RUSEC 40 STATION WHERE LINEAR PRODUCTION TERMS FIRST DOMINATE DVER RUSEC 41
¢
                             NUN-LINEAR PRODUCTION TERMS - X38
                                                                                                                                                                                            KISEC 42
                        THANSITION ELECTRON DENSITY WHEN MONLINEAR PRODUCTION TERMS ____ RUSEL 43
                           ARE CONSIDERED IN TURBULENT WAKE - CHE
                                                                                                                                                                                               RUSEC 44
        TERMS IN TURBULENT WAKE - DSB
C
                                                                                                                                                                                               RUSEC 40
                 CB1 * B1
                                                                                                                                                                                               ROSEC 47
                  COUM . UDW
                                                                                                                                                                                              HOSEL 48
                                                                          ROSEU 48
84. BUSEC - Summing Consistency C
             .....CIGHUS . SIGHOS.....
                  XB20 . BTHEN
                                                                                                                                                                                           HUSEL 50
                                                                                        ACSEC 51
             --- SCN1 # 0001---
  200 F2 = F+ F
                  7K = 6.283185308C69 * F2 .... ROSEC 53
                  wCl * F2/1.008
                                                                                                                                                                                            HUSEC 54
               - INSZ= ZNUS . ZNUS . DOS CONTROL DE CONTROL
C.
                                                                                                                                                                                           Risel So
C
                     RU - ATMOSPHERIC DENSITY AS A FUNCTION OF ALTITUDE
                                                                                                                                                                                HUSEC 57
                  HO . DEXP(-HH/XBZ)
                                                                                                                                                                                           HUSEC SU
ť,
                                                                                                                                                                                               HUSEL 59
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200			
C	ZNCR - ELECTRON DENSITY AT WHICH THE PLASMA BECOMES OVERDENSE	RCSEC	60
	- ZNCR - MC1+1(1.000 & RO + RO + ZNS2/F2)++C51	ACSEC	61
Č .		RUSEC	66
C	XTT - TRANSITION PT. ONSET OF OVERDENSE REGION	RUSEC	63
	XTT * C1/RO * (1.000 -C2/(2ME ** C3)) & C4	RUSEC	64
116	XTT * C1/RO * (1.000 -C2/(2HE ** C3)) & C4 ZNNCR= ZNET/ZNCR	RUSEC	65
	HVA H ZNNCP BA YUZD	The last the feet for	
: (P)(P)(R) Hotel ((A)(A)(A)	WCR2 * CNE * CNE/(INCR. * INCR)	RCSEC	67
604	IF(PHI)605,604,005 PHI = 0.0100	RESEC	AU
605	1F1PH1 -90.0001790,790,791	RUSES	70
791	######################################	07550	71
line of the state	CONVERT PHE TO RADIANS AND FIND ITS SINE AND COSINE	0"1-1	7.4
790	PH = PHI + 1.745329250-2	RUSEC	
* * **	SPH = DSIN(PH)		14
	CPH = CCOS(PH)	RUSEC	
	of the site of the	ROSEC	
	COLL - COLS	RUSEC	77
	SPH4 # SPH2 * SPH2	RUSEC	
e jed or outgood south	TEST TO PREVENT OVERFLOW (COS 90 = 0)		79
		ROSEC	90
	IF(PH1-90.000)606,607,606	RUSEC	64
607	TO AND THE REPORT OF THE PARTY	KISEC	dZ
-	WW FW WYN	ROSEC	83
606	WS1 = 150.000 + TAU/CPH	RCSEC	84
408	-ZCR2 # ZNNCR * ZNNCR *	RUSEC	85
	ZCR4 = ZCR2+ ZCR2	RESEC	60
	WS7 - B1 - X820	RESEC	87
		RESEL	-
	XUU - UNSET UF CONSTANT MULTIPLE SCATTERING REGION	RESEC	59
	#ID = #2800	D"CLF	30
	1F1X2800-X38)53,51,51	BULEL	94
51	XUD* DLOG(2CR2)/81	RCSEL	
53	IF(X00)1,2,2	RESEL	
	CLQU * 0.000	ROSEC	7 -
	கர் நடித்து வருக்கு நடித்து நடித்து வருக்கு கடித்து	HUSEL	
in the state of	WORD - WIN AS A A SE VIA SE MEZATIVE	ROSEC	96
	XODP * XUD OR 0.0 IF XUD IS NEGATIVE		
	GO TO 3	KUSEL	48
	CLOD = DMINITHSI, XOD)	HUSECI	100
	AUUT - AUU-du de		
w 101		RCSECT	102
	*** XSS - PT. OF ONSET OF SINGLE SCATTERING REGION		
. 3		RUSECI	
1		ROSECI	105
0000	WRITE (6,2000) RO,XTT,ZMCR,ZMNCR,XOD FURMAT(18X,7H RO=,1PE15.7,6H XT=,1PE15.7,6H NECR=,1PE15.7,10	ROSECI	136
0000	FURNATULEX.7H RU=, 1PELS.7.6H XT=, 1PELS.7.6H NECR=, 1PELS.7.10	HRLSECI	07
	NET/NECR=.1PE15.7.6H XOD=.1PE15.7) 	KUSECI	108
.0000	FIXSSI4,5,5	ACSEC	109
4	CLSS * 0.000	RASEC.	40
10.504041		RESECT	111
All distances	COMPUVE X5SP WHICH WILL REPLACE XSS IN ALL EQUATIONS -	RESECT	112
al distribution	XSSP - XSS OR O.O IF XSS IS NEGATIVE	in this	1 1 2
	YCCO - A ABA	WELL BUT	No.
	60 CO-TO 6 [27-10] (Mindred monod) (Mindred mo	RCSEC	14
egg galla Hillian	[0] [4] The second of the seco	Krach	113
	CLSS - DMINI(WSI-XSS)	RUSELI	110
5		R. SHI	1 7
	A STATE OF THE STA	La de ris de de la	N 46. F
5 6	CUNTINUE THITNUZ-1330001,10001,30001	RESECT	110

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1000L WRITE 16,20001) CLOD, XODP, XSS, CLSS, XSSP
20001 FURMAT( &X. 7H GLOD=+ 1PEL5. 7.6H XODP=+1PEL5. 7.64 XSS=+1PEL5. 7.10HK_SEC121
       CLSS=,1PE15.7,6H XSSP=,1PE15.71
    1
30001 DDMS = DDM * DOW
                                                                     MCS CCLCS
       DOW2 = DOW * DOW
                                                                     RESELIZA
       DDW4 = DDW2 + DDW2 -
                                                                     HLSEC125
      XXXX = \{ZK * B24 * DDW\}**3
                                                                     RCSEL126
        DWST - SURFACE SCATTERING CURRECTION TERM FOR BASE DIAMETER
                                                                    RUSELIZE
      DWST =(xxxx/(2.000 * SPH2 & xxxx1) * DOW
                                                                     HUSELLZ9
      DEN # (1.000 &82 *Fz/1.008 * DDW2)**83
      HO =(BZERD* (F2/1.0D8)**2 * DDW4)/DEN
DWB1= DDW * SPH2/BL
                                                                     RUSELIBI
                                                                     RUSELLISE
     -DWBST1 = DWST * SPH2/B1
       IF(X8201800,801,800
C
                                                                     RENELLOS
        XMS - PT. OF ONSET OF VARIABLE MULTIPLE SCATTERING REGION
                                                                    RCSEC135
  801 XHS = XUDP
                                                                    KCSEL137
      GU TO 802
                                                                     RESELLED
--- 800- CUNTINUE
                                                                   .. KISELISY
     XMS = 2.000 * DLDG(80 * WS4 * SPH**(2.0D0*(1.0D0- X820))*2.0D0)/ KCSEC140
                                                                     RISEC.41
     1 WS7
  802 IFIXMS-X0DPJ760,761,761
  760 XMSP = XODP
                                                                     KUSEL143
      GU TO 762
                                                                     RCSEL144
  761 - XMSP = XMS
  762 XLHUD = DMAX11XMSP.XODP1
                                                                     RUSELIGO
10002 WRITE (6,20002) XXXX, DWST, DEN, BO, XMS
                                                                     RISEC167
20002 FURMAT(18X, 7H XXXX=, 1PEL5.7, 6H DWST=, 1PEL5.7, 6H DEN=, 1PEL5.7, 10HRC; EC1+9
            BO=,1PE15.7,6H XMS=,1PE15.71
                                                                     RCSEC150
30002 KLMSD = DMINI(XLMJD, WS1) ......
                                                                     RCSEC131
      KLMS = 0.000
                                                                    RESELL52
      1+(AMSP-XGDP)742,742,743
                                                                    RESECTOR
  743 KLMS = (XMSP-XUDP1/2.000
                                                                    RUSEULD4
      RESECTOR
      -XLMS = DMAX1(0.0D0,XLMS)
                                                                    KISELISE
  742 - CUNTINUE
                                                                    RESELLO7
       WS6 = X3B/WS1
                                                                    RUS ELLS B
       E1 = DEXP(-81 + CLOD)
                                                                    ROSEL159
       E2 = DEXP(-B1 * CLSS)
                                                                    RESECTION
       E3 = DEXP(-B1 * WS1).
                                                                 RUSECISI
      SPH16 = SPH2/16.000
      TRM1 = CLOD + LWST + SPH2-6 DWST/81+2CR2+(191-E3)+SPH16 ..... KLSECIO3
     16 BU *(E2-E31) 6 KLMS * DWST * SPH2
                                                                    RCSEL154
       IFIIND 2-11 3000 3, 1000 3, 3000 3
                                                            -- KCSEC155
10003 WRITE (0,20003) XLMSD, XLMS, TMM1.E1.E2
                                                                     KCSEC150
20003 FURMAT(18X.7H XLMSD=,1PE45.7.6H XLMS+.1PE15.7.6H_TRM1+,1PE15.7.1DHKJSEC467
     1
           E1=,1PE15.7,6H E2=,1PE15.71
                                                                    RISELLOS
-30003 - CONTINUE .....
                                                                 KCSEC169...
                                                                RISEC170
      E) = DEXP(-4.000 * B1 * CLOD) - DEXP(-4.000*4S1 * B1)
C
                                                                    RCSEC171
        THE FULLOWING TEST IS USED TO PREVENT UNDERFLOW
                                                                    ACSEC172
       1F(DABS(EL) - 4.00-619005,9005,9006
                                                                    RESECT13
 9005 FL = 0.000
                                                                    RESEL174
 9006 CUNTINUE
                                                                ..... RCSEC175 ...
      1F(XB201780,781,780
  780 E2 = DEXP[-0.500 * WS7 * XLMSD] - DEXP[-WS7 * CLSS/2.000]
                                                                    KUSEC177
                                                                    KLSEL178
         SIGP - PEAK WAKE RACAR CRUSS SECTION
                                                                    RCSLC17 Y
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. 4	SIGP = TRML & DWST + SPH2 + ZCR4+0.2500/B1+E1+ZCR4 &2.000+B0+SPH2 - **{2.000 - X320}/WS7- * ZNNCR**XB20 * E2.*_DWST.	
	GU TO 782	RC58C181
		HC2ECT85
781	The second of th	RCSEC183
***	* (CLSS - XLMSD) * DDW	RCSEC104
782	CONTINUE	KLSEC185
91 101	IF(IND2-1)30004,10004,30004 WRITE (6,20004) SIGP	RUSELAND
HINDOO4	WRITE (6,20004) SIGP.	RCSECIST.
7 20004	FURMAT(18X.7H SIGP=.1PE)5.7 //1	ROSECIBB
haragainti al ca diffe na althor		BULLIAN B
as allow	THE FULLOWING SET OF STATEMENTS COMPUTE THE WAKE LENGTH (WAKEL)	ROSECTAD
30004	WAKEL = 0.000	RUSEL191
or Com		00666.3
hacen'	NOPT = 0 - COMPUTE SIGP UNLY	HOSECTAR
(In Conf.	NOPT = 1. COMPUTE SIGP AND WAKEL	RUSEC194
ton @ envi		RUSEULPS
procession .	1F(NOPT)65,900,65	RCSEC196
weeking 65	J # 0	RUSEC197
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Lean new	N1 = NSTWL &1 	V-2CF144
Chai	The second secon	KC3 CC200
MAN 40		RCS EC 201
salar (kilis)		RCSeC202
on Second	SIG = FUN1(XX,NF)	RCSEL 203
Harris and American	IFIJ-N1)-750,750,751	RUSEC204
Terrespond.	- 17-14-17-17-17-17-17-17-17-17-17-17-17-17-17-	
761	WOLLE IN DOZDE	RUSEC206
10000	WRITE (6,20005) FURMAT(2X,69HWARNING-NUMBER OF STEPS REQUIRED TO COMPUTE WAKE LENG	RISEL207
S Charle	TOWNER TO STEPS REQUIRED TO COMPUTE WAKE LENG	HCSEC 20 A
Salarinosa.	TH EXCEEDS NSTWL /)	KCSEC209
71991,00017	RETURN	RCSEC210
G	NE LYKI	
Parison -		RCSEC212
750	GO TO (731,732,733),1T	RUSECZIB
,	0 10 (151,152,155),11	RCSEC 214
731	ALL TANKS OF THE OWNER OF THE PROPERTY AND THE PROPERTY A	RUSEU215
	17 = 2 J = J61 :: (	RUSECZIO
11, 16hr <b>1,34</b> in	- J = JLE to the common to the	RUSEUZLT
	XN = XX	RCSEC218
	of SIGN = SIGNE was to a few commencers to be tracted from the control of the con	KUSECZ19
	GO TO 740	RCSEU220
C	At the property of the propert	RCS EC 221
732	IT = 3 GO TO 734	RCS EC 222
	mi GO. TO - 73 4	RCSECZZJ .
9		RCSEC224
- <u>c</u> -	AMPRICATION     Product Concernance and Annie (16) (16) (16) (16) (16) (16) (16) (16)	RCSEC225
C		RUSEC226
733		RCS EC 227
735	XL1 = XN	RCSEC228
	GO TO 734	RCSEC229
	XH1 = XX	RCSEC230
• <b>C</b> applied to	(a) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	RCSEC431
C		BOCKEDAS
1800 P  44	CALL FIBL(XL1, XH1, 1, 1, 1, 1, 00-4, 20, XPEAK, SPEAK)	RESECTOR
C		RCSEC234
-C-+	primery to stand or their (24) where it were not account or specification to accompany their conditions to the specific condition to the specific co	
100	1F(SPEAK-SIGNUS)737,737,738	RISEL236
737	A S A S A S A S A S A S A S A S A S A S	RCSELZ37
	RETURN	ROSEC23B
C .	Political Control of the control of	RISECZ39

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C	RCSEC240
- 738 - XN - XPEAK	A2361241
J * 1	NCSELZ42
741 XJ - DFLUAT(J)	MCSEC243
XX = XPEAK & DX + XJ	HISELZ44
- SIG - FUNI(XX, NF)	HUSELZ45
1F(S1G - SIGMDS)739,739,7422	HLSEL246
7422 - M. JEL	KLSECZ47
1F(J-N1)752,752,751	ALSEL24B
752 XN = XX	Kibelet 9
GO TO 741	ALSEC250
c	KISELESI
739 CALL FIBI(XN, XX, 2,-1,1.00-4, 20, XNL, DUM)	RubeCabi
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                                    CHIGH(16), COUNN(16), THTHO(25), THOELZ(25), THOELT(25),
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                                 TXCGDL(50), TXCGD2(50), TABLE(50), TABLE(50)
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              EDUTYALENCE (OCCURIODOL9), CAPG )
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             EQUIVALENCE (OCCUR! 03549), CDOWN )
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              EUUIVALENCE (DCCURTODIBO), CPG2 )
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	EQUIVALENCE	10CCUR1 00148)	TWST J	to the million-uniqued delaids of bottom control to the control to	READLAND
4 1 1 1 1 1	EQUIVALENCE-	10CCURT 001491	-TWL -	HELD THE CONTROL OF THE PROPERTY OF THE PROPER	- KELLIJAJA
	all has a line of a son littles of all	LOUGHIDE DOLLARL.	. Y.J. 1		READIL34
	EGULVALENCE	10CCUR102833)	TXCGOLI		REAULES 5
	EQUIVALENCE	(DCCURTO2883)	TXCGU21	A CONTRACTOR OF THE CONTRACTOR	HEADILIO
	EUULVALENCE	(DCCURTOO LOS)	, TO	Calculated to the Control of the Con	HEADILS?
	EQUIVALENCE	10CCUR1 00 2471	. UPBNOZ!	NOS HARRONIA DE MANTE DE LA CONTRACTOR D	REAULLON
160000 14011 (A)-IN SÉMES (A ÉMES	EUUI VALENCE	(DCCURT 00 106)			
	EQUIVALENCE	tOCCURT 034581	, WCDTAB!	l e e e e e e e e e e e e e e e e e e e	<b>READ1140</b>
	EQUIVAL ENCE	(UCCURT 03 308)	. WHTAB I	II MMI	HEADILAL
	<b>EUULVALENCE</b>	(DCCURCOLLI9)	. WTMINE	1	REAUI 142
	HUULVALENCE	(OCCUR( 01 269)	. WIPTOT	in a second	REAUILLA
	EQUIVAL ENCE	(OCCUR( 01 194)	. WTO THE	1	READIL44
The second of the		LUCCURT 01 0441		Tigas (Aprillation in the Company and the company of the Company o	KEAUILS5
	EUUTVAL ENCE	10CCUR(00133)	. W1		KEAJI L46
		toccurt 00 1391	. W2	p —— Menderatio	READIL47
	EQUIVAL ENCE	(OCCURT 00 238)			READI148
	EQUIVAL ENCE	IOCCURI 001071	ONA.	Complete to the terms of the second of the s	READILAR
	EUUIVAL ENCE	(UCCURT 00 237)	. XUP	ા હતાલા inapalasanaman na + anavalasi (કેમ્પ્યરાગ (લેકા કર્માં પ્રત્યાલ (લેકા કર્માં કેમ્પ્ય કર્યું) તેવનો કે	REAULIDO
a lite!	. EUUIVAL ENCE	(OCCURTO0 240)	. XLLOW.	।। नंत्रमुख्य (क्ल्यूम्स)स्थानसम्बद्धाः वक् क्ल्यूनसम्बद्धाः वक्षाः स्थापना विद्याः विद्यान्त्रसम्बद्धाः स्थापः चीतः चालः कः । स्थापनी ≻	KEAUI151
To-Mark	EDUIVALENCE	TUCCURT 00 2391	. XIUP	1	HEAU1152
	EUULVALENCE	(UCCUR( 00120)	. ZBAR	)	READILISA
	EUUI VAL ENCE	(OCCUR100093)		)	REAUL154
100.00	EQUIVALENCE	LUCCUR( DO 2C4)	, ZUFF	MACHINES AND THE SECOND CONTRACTORS CONTRACTORS CONTRACTORS	READIASS .
11 Y 11	<b>EQUIVALENCE</b>	LUCCURT DO 2051	. ZON	III MODERTHINI (SOOMANMANAN MANOO KOO) . MANITAI ES DE [MINOU ANC DANS DE TIMANOO	READI 150
was the second for	EUULVALENCE	(UCCURTOO 118)	. LPR1	tid Mitalistinidiscolumnistiscolumnistiscolumnistis — i Mitalism 4.9 let Dadjoon toc annis de l'Imperiose — i i cidi distante.	
Militar	EQUIVALENCE	LUCCURLOOL 191		)	KEAUL LOB
Ball du	EUULVALENCE	IUCCURI 00 1213		NAMES OF THE PARTY	REAJI 154
	EUUIVALENCE	IUCCURI 001451	. ZTURNI		REAU I 100
	EQUIVALENC	E LUCCURIDOLOS	1. 20	Darwin Committee	REAULIDA
	EUULVALENCE	(NUCCURTOB).	LATMOST	N ( ) and the control of the control	READI LEZ
100 at a 100 market des	EUULVALENCE	(NUCCURTO9).	IKCHU 1	X 1 - NOV-11-HANNING-MANUMENT PROCESSES PROCESSES AND A 1 - II - PROCESSES PROCESSES AND A 1- AND ADDRESSES IN 1- AND ADDRESSES	"HEADITOS ""
	EUU IVAL ENCE	(NUCLURE 30).	INALPHI		READI LO4
while the single	- EUULVALENCE	INOCCURIZED.	ITAPE )	THING MANNET MAKING TECHNOLOGY I AND A SHOULD AND SHOULD BE SHOULD	READILES .
	FOUTVALENCE	INDCCURTZ31.	1THRST)		KEAUL100
	FUULVALENCE	INOCCURIO71.		one while the effect to be made it when between the city is seen in the	READI167
	EUUIVAL ENCE	1400004(20).	MATLNI		REAULISE
professional contra	EUUIVALENCE.	_INUCCURTATIO			
	EUUTVALENCE	INOCCURIO61.	MAXVALI		REAUI170
NAME OF THE	EDUTVALENCE	. INOCCURTION	MHEATI	<del>क्षात्रिकोषका । । । । । । । । । । । । । । । । । । ।</del>	REAULTI .
	EUUIVALENCE	INUCCURITAL.	KIBAT XM		REAJIL72
Ne perior é .	. EUUIVALENCE	INUCCURITY!	MATABET	NORTH THIS INCLINE AND	REAJI173
	Control of the second	PROPERTY CANADA TANALA	MARCOLL		KEAULL/4
HIT CHARLES UP	- EUULYALENCE	(NOCCUR!19)	MAXACDI	अभीतान पृथित को स्थापक कर कर कर कर कर का किया है। अवसाधा अवकार अपने राज्य सार प्रतिकार के का का गाया है। असे आ	READIL75
	EQUIVALENCE	INUCCURITS).	NGEUM 1	8	READITY 6
UMOT.	EUULYALENCE	. (NOCCUR(03).	MUPT 1	1 1 F 9 9 10 10 10 10 10 10 10 10 10 10 10 10 10	REAULT77
156 61 1		INUCCURIODS).			KENDITIO
		# INCCCARC241			REAUL179

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EQUIVALENCE (NOCCUR(14), NPRINT)
                                                                    REAUI180
     - EQUIVALENCE-INOCCUR(22). NTHRST) ----
                                                                ..... REAJI181.
     EQUIVALENCE (10CCUR(00001), 10P )
                                                                    KEAUI182
¢
                                                                - - REAULIBS
C
                                                                    READILE 4
    REAULIES
¢
                                                                    READIA86
C -
                                                                  ... REAULIST.
C
                                                                    BOLICHSK
     GO TO (1.2). ILL 111 ----
                                                                    REAULIB9
     CONTINUE
L
                                                                    REAUL190
     CALL ZREADX
                                                                    KEAUI191
     CALL SETUP(8H3CCUR , 8,0CCUR, 4000)
                                                                    REAULINE
C
                                                                    KEAUII93
0
          CASE IDENTIFICATION INPUTS
                                                                    KEAJI194
     CALL SETUPIBHCASE +8.CASE )
                                                                    REAULLYS
     CALL SETUPIBHUATE
                        . 6.DATE )
                                                                    KLAUL196
     CALL SETUPIBHMEMU
                        -8.EMO
                                 ) ...
                                                                    REAULL97
C
                                                                    KEADIL9H
         .. PRINTING AND STOP CONTROLS .....
                                                                    REAJ1199 ..
     CALL SETUP ( BHNPRINT , 4. NPRINT)
                                                                    REAULZOU
     CALL SETUPEBHZPK. . . +8+ZPK. ).
                                                                    READIZO1
                        . 8. ZBAR )
     CALL SETUPI SHZBAK
                                                                   REAUI 202
                                                                  * KEAU1203
     CALL SETUPI 8HZPR2
                        - +8,2PA2 1
     CALL SETUPIBHEST
                        .8.ZST )
.8.TST )
                                                                   REAUI 204
     CALL SETUP( BHTS.T....
                                                                   KEAULZ05
     CALL SETUPIONALST
                         .8.ALST )
                                                                    READIZOD
C
                                                                    READI 207
          INTEGRATION ACCURACY CONTROLS .
C
                                                                  READI208
     CALL SETUP(SHDELIN , 8, DELIN )
                                                                   READIZO9
     CALL SETUPIBHCHIGH
                        ,8,CHIGH ,16)
                                                                    READIZIO
     KEAJIZLL
C
                                                                   READIZLE
          INPUT TRANSITION ALTITUDE TRZTR
Ċ.
                                                                   READIZIS
     CALL SETUPEBHTRZTR . 8,TRZTR 1
                                                                   READIZL4
C
                                                                ... READIZES
¢
          INPUT LIMITS ON THE FAIRING REGIONS
                                                                   READIZEO
    - CALL-SETJP(8HX1UP------, 6,X1UP---)
                                                                 ..... READI 217 .
     CALL SETUP( BHX1LOW , E, X1LJW )
                                                                   REAUI 218
     CALL SETUP(BHXUP - -- + 8+XUP ) .....
                                                                  READIZES
                        18-XLOW )
     CALL SETUPIBHALOW
                                                                   READI 220
C
                                                                   REAULZZE .
          TRAJECTORY OPTION AND INITIAL VALUES OF TRAJECTORY PARAMETERSREAJI 222
C
    -- CALL-SETUP( BHLOPT .____, 4, LUPT .___). REAJ1223
     CALL SETUPIBHZO
                     ,8,ZO
                                                                   READ1224
   --- CALL SETUP( 8HGAMFO ---- # GAMFO ...
                                                                 .. REAU1225
     CALL SETUP(8HVO .8.VO )
                                                                   KEAD1226
     REAUL227
     CALL SETUPI'BHXRO , 8, XRO
                                                                   READI 228
     CALL - SETUPI 8HPO____
                       REAUI229
     CALL SETUP(8HQ0
                      , 8,00
                                                                   REAULZ30
     CALL SETUP( 8HSMKO ...... + 8+SMRO ...)
                                                                   REAJI231
     CALL SETUP(8HPHIO .8,PHIO )
CALL SETUP(8HPSIO .8,PSIO )
                                                                   KEAJ1232
    - CALL SETUPEBHPS TO
                                                                   READIZES
     CALL SETUPIBHTHEALO .8.THEALOJ
C
                                                                  READI235
          INPUT TEST QUANTITIES FOR ANGLE OF ATTACK CYCLE TIME
C.
                                                                   REAUIZSO
     CALL SETUPIBHTCRIT
                        . B.TCRIT 1
                                                                   REAJI237
     CALL SETUPIONTECUN
                         . 8. TECON )
                                                                   REAUI 238
                                                                   REAULESY
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C	NUMBER OF TABULAR INPUTS FOR EITHER THE INPUT WIND TUNNEL	REAUI240
č	OPTION OR THE INPUT-TRAJECTORY-UPTION.	READ1441
	CALL SETUP(BHMAXVAL ,4,MAXVAL)	KLAUI242
C		READI 243
č	INPUTS FOR WIND TUNNEL OPTION	REAJ1244
-	CALL SETUP ( SHWT / . S.WTZ.75)	REAULZ45
	INPUTS FOR WIND TUNNEL OPTION  CALL SETUP(BHWTZ, 75)  CALL SETUP(BHWTMINF + 8, WTMINF + 75)	REAULZ40
	CALL SETUP(BHWTMINF +8.WTMINF+75)	REAU1247
	CALL SETUDIANMENTOTOL . A. MIDINI. 751	READIZAB
C		REAU1249
C	INPUTS FOR TABULAR INPUT TRAJECTORY	READI250
14	CALL SETUP(8HTRAJT +8.TRAJT-75)	READI 251
	CALL SETUP(8HTRAJZ ,8,TKAJZ,75)CALL_SETUP(8HTRAJV,8,TRAJV,75)	REAU1252
	CALL_SETUP(8HTRAJV, 8,TRAJV, 75)	REAUL253
	CALL SETUP( 8HTRAJW , 8, TRAJW, 75)	READI 254
	CALL SETUP(8HTRAJW ,8,TRAJRN,75) CALL SETUP(8HTRAJRN ,8,TRAJRN,75)	RLADI 255
	CALL SETUP(BHTRJALP ,8,TRJALP,75)	REAUI 256
C		REAJI 257
C	TABULAR INPUT ANGLE OF ATTACK FOR USE WITH LOPT=1 TRAJECTORY	READI258
a 100 to 40	CALL SETUPI BHINALPH 4. INALPH)	REAJ1259
	CALL SETUPIBHALPTAB ,8,ALPTAB,751	READI 260
C		REAJI261
C	MASS LOSS OPTION INPUTS	2021UA3N
	CALL SETUP( BHMOPT +4, MUPT )	REAJI233
	MASS LOSS UPTION INPUTS  CALL SETUP(BHMOPT +4,MUPT )  CALL SETUP(BHMHEAT +4,MHEAT )  CALL SETUP(BHNOSEOP +4,NUSEOP)	NEAU1204
4144 414	CALL SETUP ( BHINDSEUP - + 4+NUSEUP)	READI266
C		
C	CALL SETUP( 8HTWST , 8, TWST )	READI26b
	CALL SCIUPTORING! 101143.	READIZAR
C	TIMET IS INTERNAL TEMPERATURE OF VEHICLE USED TO OBTAIN	REAJ1270
C	TINIT IS INTERNAL TEMPERATURE OF VEHICLE USED TO OBTAIN TEMPERATURE GRADIENT IN MASS LOSS CALCULATIONS USING THE	KENJI 474
Č	ITERATIVE METHOD.	KEAUL272
	CALL SETUP( SHTINIT 8.TINIT)	REAULZ72
c		VEWATELA
C	UPTION INDICATING THE SET OF GEOMETRIC VARIABLES BEING INPUT	REAUL 275
ΔŦ	CALL SETUPIBHNGEOM ,4.NGEUM )	REAUL276
. C	GRICK TO INPUT CRO	
110.		READIZ77
	CALL SETUP(BHIKCHQ ,4,1KCHQ)	READIZ77
C	CALL SETUP(SHIKCHQ ,4.1KCHQ ) GEOMETRY INPUTS FOR THE FIRST CONFIGURATION	READIZTO READIZTO READIZTY
C	CALL SETUP(BHIKCMQ ,4.1KCMQ ) GEOMETRY INPUTS FOR THE FIRST CONFIGURATION CALL SETUP(BHN1 ,8.W1 )	READIZ77 READIZ7d READIZ79 READIZ80
C	CALL SETUP(BHIKCMQ ,4.1KCMQ ) GEOMETRY INPUTS FOR THE FIRST CONFIGURATION CALL SETUP(BHHI ,8.1H) CALL SETUP(BHTHETAL ,8.THETAL)	READIZTO READIZTO READIZTO READIZTO READIZEO
C	CALL SETUP(BHIKCMQ ,4.1KCMQ ) GEOMETRY INPUTS FOR THE FIRST CONFIGURATION CALL SETUP(BHHI ,8.HI ) CALL SETUP(BHTHETAL ,8.THETAL) CALL SETUP(BHKNI ,8.RNI )	READIZ77 READIZ7d READIZ79 READIZ80 READIZ84 READIZ82
C	CALL SETUP(8HN1	THE PERSON NAMED IN COLUMN 2 I
C	CALL SETUP( BHLAMDAL , B, LAMDAL)	REAUL 284
	CALL SETUP(BHLAMDAL , B,LAMDAL) CALL SETUP(BHLAL , B,LAL )	REAUI 284 KEAUI 285
	CALL SETUP(BHLAMDAL , B,LAMDAL) CALL SETUP(BHLAL , B,LAL ) CALL SETUP(BHMXTABL , 4,MXTABL)	REAUI 264 KEAUI 265
	CALL SETUP(BHLAMDAL , B,LAMDAL)  CALL SETUP(BHLAL , B,LAL )  CALL SETUP(BHMXTABL , 4,MXTABL)  CALL SETUP(BHCMQINL , B,CMQINL)	REAUI 284 KEAUI 285 REAUI 286 REAUI 267
	CALL SETUP(BHLAMDAL , B,LAMDAL)  CALL SETUP(BHLAL , B,LAL )  CALL SETUP(BHMXTABL , 4,MXTABL)  CALL SETUP(BHCMQINL , B,CMQINL)	REAUI 284 KEAUI 285 REAUI 286 REAUI 267
	CALL SETUP(BHLAMDAL .B.LAMDAL) CALL SETUP(BHLAL .B.LAL ) CALL SETUP(BHLAL .B.LAL ) CALL SETUP(BHLATABL .4.MXTABL) CALL SETUP(BHCMQINL .B.CMQINL) CALL SETUP(BHTABZL .B.TABZL .50) CALL SETUP(BHTXCGUL .B.TXCGDL.50)	REAUI 264 KEAUI 265 REAUI 266 REAUI 267 REAUI 268 REAUI 289 REAUI 289
	CALL SETUP(BHLAMDAL .B.LAMDAL) CALL SETUP(BHLAL .B.LAL ) CALL SETUP(BHLAL .B.LAL ) CALL SETUP(BHLATABL .4.MXTABL) CALL SETUP(BHCMQINL .B.CMQINL) CALL SETUP(BHTABZL .B.TABZL .50) CALL SETUP(BHTXCGUL .B.TXCGDL.50)	REAUI 264 KEAUI 265 REAUI 266 REAUI 267 REAUI 268 REAUI 289 REAUI 289
	CALL SETUP(BHLAMDAL .B.LAMDAL)  CALL SETUP(BHLAL .B.LAL )  CALL SETUP(BHMXTABL .4.MXTABL)  CALL SETUP(BHCMQINL .B.CMQINL)  CALL SETUP(BHTABZL .B.TABZL .50)  CALL SETUP(BHTABZL .B.TXCGOL.50)  CALL SETUP(BHTABIL .B.TABLL .50)  CALL SETUP(BHTABIL .B.TABLL .50)	REAUI 264 KEAUI 265 REAUI 266 REAUI 267 REAUI 268 REAUI 289 REAUI 290 REAUI 291 REAUI 292
	CALL SETUP(8HLAMDAL .8.LAMDAL) CALL SETUP(8HLAL .8.LAL ) CALL SETUP(8HMXTABL .4.MXTABL) CALL SETUP(8HCMQINL .8.CMQINL) CALL SETUP(8HTABZL .8.TABZL .50) CALL SETUP(8HTABZL .8.TXCGDL.50) CALL SETUP(8HTABIL .8.TABIL .50) CALL SETUP(8HTABIL .8.TABIL .50)	REAUI 264 KEAUI 265 REAUI 266 REAUI 267 REAUI 268 REAUI 289 REAUI 290 REAUI 291 REAUI 292
	CALL SETUP(BHLAMDAL .B.LAMDAL)  CALL SETUP(BHLAL .B.LAL )  CALL SETUP(BHMXTABL .4.MXTABL)  CALL SETUP(BHCMQINL .B.CMQINL)  CALL SETUP(BHTABZL .B.TABZL .50)  CALL SETUP(BHTABZL .B.TXCGOL.50)  CALL SETUP(BHTABIL .B.TABIL .50)  CALL SETUP(BHTABIL .B.TABIL .50)  CALL SETUP(BHTABIXL .B.TABIL .50)  CALL SETUP(BHTABIXL .B.TABIL .50)	REAUI 264 REAUI 265 REAUI 266 REAUI 267 REAUI 268 REAUI 269 REAUI 290 REAUI 291 REAUI 292 REAUI 293
	CALL SETUP(BHLAMDAL .B.LAMDAL)  CALL SETUP(BHLAL .B.LAL )  CALL SETUP(BHMXTABL .4.MXTABL)  CALL SETUP(BHCMQINL .B.CMQINL)  CALL SETUP(BHTABZL .B.TABZL .50)  CALL SETUP(BHTABZL .B.TXCGDL.50)  CALL SETUP(BHTABIL .B.TABIL .50)  CALL SETUP(BHTABIXL .B.TABIL .50)  CALL SETUP(BHTABIXL .B.TABIXL .50)  CALL SETUP(BHTABIXL .B.TABIXL .50)  CALL SETUP(BHTABIXL .B.TABIXL .50)	REAUI 264 REAUI 265 REAUI 266 REAUI 267 REAUI 268 REAUI 269 REAUI 290 REAUI 291 REAUI 292 REAUI 293 REAUI 294 REAUI 295
	CALL SETUP(BHLAMDAL .B.LAMDAL)  CALL SETUP(BHLAL .B.LAL )  CALL SETUP(BHMXTABL .4.MXTABL)  CALL SETUP(BHCMQINL .B.CMQINL)  CALL SETUP(BHTABZL .B.TABZL .50)  CALL SETUP(BHTABZL .B.TXCGDL.50)  CALL SETUP(BHTABIL .B.TABIL .50)  CALL SETUP(BHTABIXL .B.TABIL .50)  CALL SETUP(BHTABIXL .B.TABIXL .50)  CALL SETUP(BHTABIXL .B.TABIXL .50)  CALL SETUP(BHTABIXL .B.TABIXL .50)	REAUI 264 REAUI 265 REAUI 266 REAUI 267 REAUI 268 REAUI 269 REAUI 290 REAUI 291 REAUI 292 REAUI 293 REAUI 294 REAUI 295 REAUI 296
	CALL SETUP(BHLAMDA1 .B.LAMDA1)  CALL SETUP(BHLA1 .B.LA1 )  CALL SETUP(BHMXTAB1 .4.MXTAB1)  CALL SETUP(BHCMQIN1 .B.CMQIN1)  CALL SETUP(BHTABZ1 .B.TABZ1 .50)  CALL SETUP(BHTABI1 .B.TABI1 .50)  CALL SETUP(BHTABIX .B.TABIX .50)  CALL SETUP(BHTABIXI .B.TABIXI.50)  FIRST CONFIGURATION HEATSHIELD PROPERTIES  CALL SETUP(BHMATLN1 .4.MATLN1)  CALL SETUP(BHBTW1 .B.TWI ]  CALL SETUP(BHBTW1 .B.BETAII)	REAUI 264 REAUI 265 REAUI 266 REAUI 267 REAUI 268 REAUI 290 REAUI 290 REAUI 291 REAUI 292 REAUI 293 REAUI 294 REAUI 295 REAUI 296 REAUI 297
- C	CALL SETUP(BHLAMDA1 .B.LAMDA1)  CALL SETUP(BHLA1 .B.LA1 )  CALL SETUP(BHMXTAB1 .4.MXTAB1)  CALL SETUP(BHCMQIN1 .B.CMQIN1)  CALL SETUP(BHTABZ1 .B.TABZ1 .50)  CALL SETUP(BHTABI1 .B.TABI1 .50)  CALL SETUP(BHTABIX .B.TABIX .50)  CALL SETUP(BHTABIXI .B.TABIX .50)  FIRST CONFIGURATION HEATSHIELD PROPERTIES  CALL SETUP(BHMATLN1 .4.MATLN1)  CALL SETUP(BHBTW1 .B.TWI )  CALL SETUP(BHBTW1 .B.FWI )	REAUI 284 REAUI 285 REAUI 286 REAUI 288 REAUI 289 REAUI 290 REAUI 291 REAUI 292 REAUI 293 REAUI 294 REAUI 295 REAUI 296

```
CALL SETUP(BHHREF1 .8, HREF1 )
                                                                         READLADO
    -CALL SETUP(BHF1 --- , 8, FL --- )
                                                                         REAUL304
      CALL SETUP(8HRH021 ,8,RHJ21 )
                                                                         SOE LUASH
      CALL-SETUP(BHDELRH1 -- , 8, DELRH1) ---
                                                                         READIBUS
      CALL SETUP(8HCP21 ,8,CP21 )
                                                                         REAUL SOW
      CALL SETUP(BHCPG1 -- ,8,CPG1 )
CALL SETUP(BHNSL1 ,8,NSL1 )
                                                                         READI 305
                                                                         REAUL 306
      READI 307.
     CALL SETUP(8HNGL1 ,8,NGL1 )
CALL SETUP(8HNGT1 ,8,NGT1 )
CALL SETUP(8HDELHC1 ,8,DELHC1)
                                                                         REAJI308
                                                                         RE401 509
                                                                         KEAD1310
      CALL SETUPIBHEPSILI ,8,EPSILI)
                                                                         REAUISLL
¢
                                                                         READISEZ
C.
          -- ZTURN IS ALTITUDE-FOR DISCONTINUOUS CONFIGURATION CHANGE
                                                                         E. Le I Uas S.
      CALL SETUP( 8HZTURN , 8, ZTURN )
                                                                         READISL4
C
                                                                         REAUL 345
           GEOMETRY INPUTS FOR THE SECOND CONFIGURATION
C
                                                                         REAULIDED
                        --,8,W2
    - CALL SETUP(8HW2
                                    1 ....
                                                                         REAULSL7
      CALL SETUP(BHTHETA2 . 8. THETA2)
                                                                         READLEAD
     -CALL SETUPIBHRN2 ------- 8.KN2 -- 1 --
                                                                         READI 319
      CALL SETUP(8HRB2
                          ,8,RB2
                                    )
      CALL SETUP(BHLAMDA2 ... , 8, LAMDA2) ..
      READIBLE
    - CALL SETUP(8HMXTAB2 ,4,MXTAB2) -- CALL SETUP(8HCMQIN2 ,8,CMQIN2)
                                                                         KEAJI323
                                                                         READI324
     - CALL - SETUP (8HTABZ2
                          . 6.TAB22 .501 ....
                                                                         REAUL 325
      CALL SETUP(BHTXCGD2
                          +8.TXCGD2.501
                                                                         HEADI326
      CALL SETUPIBHTABIZ
                          .8.TAB12 .50)
                                                                         READI 327
      CALL SETUPEBHTABIX2
                          . E. TABIX2 . 501
                                                                         REAUL328
                                                                        READI329
Č
           SECOND CUNFIGURATION HEATSHIELD PROPERTIES
                                                                         HEAUI330
      CALL SETUP( BHMATLN2 - ,4, MATLN2)
                                                                        AEAUL331
      CALL SETUPIBHTW2
                           . E. TW2 )
                                                                         KEAUL 132
      CALL SETUPIBHILTALZ
                          , 8, BETAL21
                                                                         READLISS
      CALL SETUPIBHHETAZZ
                          . 8. BETA221
                                                                         READI 334
      CALL SETUPIBINETA32
                           . 6.8ETA321
                                                                        REAULISS
      CALL SETUPIBHBETA42 , E.BETA42)
                                                                         READI 336
      CALL SETUPISHHREF2 .... . 8. HREF2 1 .....
                                                                        READISST.
      CALL SETUPESHF2
                           , B, F2
                                    1
                                                                         KEAUI 338
     · CALL SETUPISHRHUZZ ... , 8, RHOZZ .] .... .. .. ... ... ... ...
                                                                         READI 339
      CALL SETUPEBHUELRHZ . E. DELRHZ )
                                                                         READL 340
    - CALL: SETUPI BHCP22 -- +8,CF22 1 ....
                                                                        REAULBAL .
                        , 8,CPG2 )
      CALL SETUPI 8HCPG2
                                                                         READI 342
    - CALL SETUPIUHNSLZ ---- B.NSLZ --- L.
                                                                        REAUL343
      CALL SETUPIBHNST2 . 8.NST2 1
                                                                        REAUI 344
     CALL SETUPIBHNGL2 ...... 6.NGL2 ... ) ....
                                                                        READI 365
                          , B, NGT 2
      CALL SETUPIBHNGT2
                                   1
                                                                         REAJI 340
     CALL SETUPI SHOELHC2 -+ 8.DELHC21
                                                                     READL 347
      CALL SETUPIBHEPSILZ . 8, EPSILZI
                                                                         KEAUL 348
C
                                                                        REAJI349.
           DRAG COEFFICIENT INPUTS
C.
                                                                        REAUI 350
     CALL SETUPIBHMAXCD ..... 44 MAXCD ) ...
                                                                        READI351
      CALL SETUPIBHHTAB
                           . 8. HTA8 . 751
                                                                         REAUL352
     REAJESSA
                                                                        KEAUL 354
           INCREMENT IN ORAG COEFF. INPUTS
                                                                        REAU1355
     CALL SETUPIBHMAXWCD .4.MAXWCD)
                                                                        REAUL 35 a
     CALL SETUP SHINHTAB
                           . 8, WHTAS . 751
                                                                        KEAUL 33 7
     CALL SETJPISHWCUTAB
                          . 8. HCUTAd . 75)
                                                                        REAUL 356
     CALL SCTUPEBHANKEF
                           . B. AWREF J
                                                                        REAUL 354
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		1 - 1	De processing to the control of the control of	
Hill	·	UBIICTTUA ARTSA	4 INPUTS of married in content	READ 1360
Hi h	erinte ∰i Augusta	UKOZI ING OPIJO	4 ATEM Control to the control of the	
C	ALL S	ETUP (BHNTHRUST	+4+NTHAST)	REAUL 35
Q	ALL S			
		ETUPIBHTOFF	18,TUFF } 18,ZON : 1	REAUL 30
1,00		ETUPI BHZON	BEAUTH OF THE MAN SHEET MAN SHEET MAN AND STREET OF THE ST	
C	ALL S	ETUP(BHZUFF	.8,20FF 1	REAUI 554
			441 [THRSI].	
	at a disable said. Am.	ETUP (BHTHTHO	18,THTHO 125)	KEMU135
		ETUP( BHTHDELT	. 8, THOELT. 25)	- KLAULDO
(	TALL S	ETUPI BHTHDELZ	,8,THD6LZ,25)	KEAJI 370
0	TALL S	STUP (SHTHO	+8+THO )	REAULST.
6	TALL S	MARK SARE Annual St		
(	ALL S	ETUPI BHAE	+ E+ISP )	READIST.
	TALL S	ETHPI HIPSIZET	.B.PSIZET1	WEA.11.474
	ALL S	ETUPI BHTHEZET	, 8, THE ZET)	REAUIS7
	at a man of the	ETUPI BHUELZ	,6,0£LY ) ,8,0£L2	READIST
	and the same same same.			REAULOTI
المستوالة المستوالة المستوالة		NPUTS FOR TANK	AR INPUT ATMOSPHERE	D 1 A 11 1 4 7 0
		ETUPLBHEATHOS	(4,1ATAOS)	REAU! 3d4
"	an orthogram and	ETUPI BHUP BNDL .		REAUL 301
				READI 58
	A STATE	STUDIALITATION	.8,CNBND21 ,8,TBATM2,50)	KEAUL 38.
	at I sale	also sales and a fine to the same of the sales and the sales and the sales are the sales and the sales are the sal	and the same of th	
	AND D	ETUPIONIADROU ETUPIDUTACEN	.8.TABSND.50)	KEAUL36
e chelo hemolitechiele d				
		-	C INDUTE	READISM
	***	ETHING AND TA	E INPUTS	REAUI36
	ALL D	STUPE OFFICE	14,NPLOT +5) 14,1TAPE )	KEAJIJE
	watt 2	CIUPIBHIIAPE	・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・	KEAUL 38
			TO DE 40 OF 60's february and the constitution of the constitution	
onlessa (* miss		MISICAL CUNSTA	The first of the state observable and the proposed page of the consequence of the control of the state of the	E 4 MARIES INTO DAMES AND DESCRIPTION OF REAULDS.
	ALL S	ETUPTUHC	, B,C , B,R	REAUL 59
	ALL S	ETUPCHIR	+Bak a later of the	READIS93
y 1	LALL S	ETUPTHHAMMA	. B. GAMMA 1	READI 394
Think	ALL S	ETUP (BHRE	* ExRE of the house of a filler control of many and	REAULBYS
ori Mil	CALL S	LTUP ( BHCAPG	BICAPG 3  BIC ON AND PLATE OF THE ANALOGUE OF SET IN THE COMMISSION WASHINGTON WASHINGTO	REAJ1390
	CALL S	ETUPCOHG	· · · · · · · · · · · · · · · · · · ·	minimum manana KEAJI 59
	CALL S	ETUPLUHZETA	+B.ZETA )	HEAUL390
10/10/11/11/11	CALL S	ETUPLUHSIG	BIZETA   I   I   I   I   I   I   I   I   I	REAJI391
	CALL S	LTUPE BHHH	BINN 1 New Hell out (Money State of the part of the pa	REAUI 400
in which is the		H LHJOH H	HILL BUNNEREN INNERSER OF CANADAS BUILDING TO THE RESIDENCE OF THE RESIDEN	REAUISO
4 14	C	INVE EIT CONCT	MTC	change (b. 2 a. 16. 2 a. 16. 2
-	CALL-S	ETUPI BHA	TO BASSIBLE CONTRACTOR OF THE PROPERTY OF THE	REAUL40
	CALL S	ETUPI BHA	,8,8,21)	READI404
			186 19les e e	REAUL+3
2 (	CALL K	EAUINI INCOLL. S	19)	READI404
evener and 1	100173	0 = 6	The Hill comments in the Health and	KEAJI 43
College College	00 66	1 . 1. 3		READI408
		6.63		READ1439
that i	1	· · O		REAJI411
			HANDERSON OF THE PROPERTY OF T	
	161100	(K) .EQ.1) [OP!	1 1	REAUI41
	UNTIN		N (Menor all or a philipsepholement of the electrical sections are also properly and the electrometric or the elec	
	al little line street	white the said the said of		ويواف ويوريون الموا
la de la la casa de	CALL T	NUE		DEADIA.
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	and the same of		Market was the first search search search and the search s	
	A STATE OF THE STA	641 61	Nighthorn or in the company of the first of	REAU14L
THE STATE OF	4 4 1	£ 45	propose as the semantic service for the propose of the semantic service for the semantic service servi	READIALS

	IOP(J) = 0	REA01420
k .	FILIPIAGO EQ. 14 ma al TEM mana & construence and construence of the c	REAJI421
	00 77 K = 1 , 63 , 6	READIAZZ
	IFITUPIKI.EQ.11 TOPIJI * M.L.	REAULASS .
77	CONTINUE	READING
- 4	16(178A.60.1) -100(74) *-1	KEAU1425
	[F([OP(J].EO.1) [OP(74) = 1	READING
A A		HEADI 427
	CALL HEDING(6)	HEADI428
	GO TH 98	READIAZY
99	IF(IMPLUT.EQ.1) CALL AVPLT(H.H.H.H.H.S.1)	READI 430
	IFILTAPE.NE. DIEND FILE B	READI 431
	IFILTAPL.NE.OIREWIND 8	REAUI+52
1 be		REAJ1433
98	RETURN	KERJI454
, 40	END	READI 435
	· Significant and the sign	*
MARKET LIGHT	The part of the pa	Ti V line i salisatela
Min I	b   [Hi]] Follows become because the proper of looks become more than 1 of the look of the state of the look of th	la la
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	તા જા પ્રમાણ કાલ છે. ૧૯૯૬ તેના તેના જાણ જાણ કરતા છે. જે જાણ જાણ જાણ કરતા હતા છે. જે જાણ જાણ કરતા હતા છે. જે જા	The sales of the
	Fig.   A control   A	nice-entities contribute contributed of release to the exp. as
	रमा १२ । । ॥   साहा क्षांक्षां रक्षा वर्षाकासका । अस्तराव । अस्तराव । अस्तराव । अस्तराव वर्षाकासकार के स्थान	11 - F - 1 - 1 - 1 - 401 1
	4 III I MARIE II BU II CERMON MARIE DAMANDE II BU I	
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14 (64 t)   15 1   16 1   164	er ( Med Ge) of Math (Sh) (Med Se )	ier if printereee is bestelling-likelye in soly in an in
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	E MICE CONTRACTOR AND ADMINISTRATION OF THE PROPERTY OF THE PR	
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6.1.1 (int. 44	** >> or took of the production which is the contract of the production of the produ	10 to

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SUBROUTINE READY
                                                                                                                                                             REAUY
                 IMPLICIT REAL *8 [A-H, O-Z]
                                                                                                                                                             REAJY
             COMMON/BLKO/ H140,401, X1401, G(40), S(40), XP(40), GP(40), T(40), GB(40) READY
           1.GS. GSP. GTP.GSS. GTT. GSB.F.FP.FB.FO.E. P.TO.RS.SL. Z.Q.A.EL. REAUY
           2UELTA.FAC.C(40,10)
                                                                                                                                                             M F Jb . D Y
            COMMON/BLKI/M, N.L.LS. MI.MS. NS. IT.K. NC.
                                                                                                                                                            READY ...
             COMMON /NALTEG/FISA, NALT
                                                                                                                                                            REAUY
                                                                                                                                                                           범
                                                                                                                                                             REAUY
             CUMMUN /END/ ITERH
             READY
                                                                                                                                                            HEAUY 10
                                                                                                                                                            REAUY II
C
                                                                                                                                                             READY 12
C
                        SUBROUTINE READY PERFORMS THE CALCULATIONS OF THE DAVIDON READY 13
                    MINIMIZATION METHOD WHICH ESTABLISH A DIRECTION ALONG WHICH TO REAUY 14
C
                    SEARCH FOR A RELATIVE MINIMUM AND BOX OFF AN INTERVAL IN
                                                                                                                                                             REAUY 15
C
                 THIS DIRECTION WITHIN WHICH A RELATIVE MINIMUM IS LOCATED.
                                                                                                                                                             KEAJY 16
                                                                                                                                                             REAUY 17
C
                                                                                                                                                             REAJY LB
C
                                                                                                                                                             KEAJY 19
                                                                                                                                                             REAUY 20
             GU TO (200, 2011,L
                                                                                                                                                             READY 21
     200 | T=1
                                                                                                                                                             READY ZZ
     201 CALL MATHP IN.N.H.G.S.
                                                                                                                                                             REAUY 25
                                                                                                                                                             REAUY 24
     202 DD 203 I=1.N
     203 S(1)=-S(1)-
                                                                                                                                                           .REAUY . 25
                                                                                                                                                             REAJY 26
                                                                                                                                                             READY 27
     205 CALL MATHP (M.N.S.G.GS)
                                                                                                                                                             REAUY 28
                                                                                                                                                             KLAUY 29
     206 IF (GSCE)207,227,227
                                                                                                                                                             KEAJY 30
                                                                                                                                                         READY 51
207
              TP1 # +FUSM+(F/GS) ....
             HRITE(6,1000) GS, E, TP1, IT
EL = OMINI(2,000, TP1)
                                                                                                                                                             READY 32
                                                                                                                                                             READY 35
     209 SL =- 65
                                                                                                                                                             REAUY 34
                                                                                                                                                             REMUY 35
                                                                                                                                                             REAUY 36
     210 DU 211 I*1.N
                                                                                                                                                             READY 57
     PLI KHIII=KIIICEL+SIII-
                                                                                                                                                             REAUY 38
.
                                                                                                                                                             REAUY 39
     212 M1-2
                                                                                                                                                             READY 40
     215 CALL FORINGEP. FP. XP. MID
              IFITERM.EU.O) GO TO 214
                                                                                                                                                             HEADY 41
                                                                                                                                                             REAUY 42
              00 1001 + 1.N
                                                            with reliability and substructure described and and and a person of the control o
                                                                                                                                                             REAUY 43
             X(I) = XP(I)
100
              GO TO 222
                                                                                                                                                             REAUY 44
                                                                                                                                                           REAUY 45
                                                                                                                                                             REAJY 46
    215 CALL MATHP (M.N.S.GP.GSP)
                                                                                                                                                             HEAUY 47
     216 IF (GSP)217,229,229
217 IF (FP-F)218,229,229
                                                                                                                                                             REAUY 48
                                                                READY 49
     218 WRITE(6,1)
                                                                                                                                                             KEAUY 50
                                                                                                                                                             KEAUY 51
                                                                                                                                                             REAUY 52
              IFINALT) 231, 231, 10
              EL = 2.00+EL
                                                                                                                                                             KEAUY 55
10
              GU TO 210
                                                                                                                                                             REAUY 54
                                                                                                                                                             READY 35
     231 FASEP
                                                                                                                                                             REAUY 50
     232 DO 234 I=1.N
     233 G0[1] =GP(1]
                                                                                                                                                             REAUY 57
                                                                                                                                                             KLAUY 58
     234 T(11+XP(1)
                                                                                                                                                             KLAUY 54
     220 16 (61-2.0)221.223.223
```

С	222 223 224- 225 -226 227 228 229 230	RETURN  DELTA=2.0*DELTA TO=1.0/SL L=2 GU TO 222 L=1 GO TO 222 L=4 GO TO 222  FORMAT (10HOUNDERSHOT) FURMAT(1H *GS =*1PE15.7,* ERR =*E15.7,* TP1 =*EL5.7,* IT =*I7) END	READY READY READY READY READY READY READY READY READY READY READY READY	61
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***				***
100   84	dag art telen		as A contraction	elitro in a sacrama in
			P 7	
let e	x 1			
	I. 1000		t promoter to the subspect of	
1	Sin I a sain lennai		ang merap ka kap 4 tepapagana	dependent of the property
	***		3 46 4 - 1 500 X 500	THE REAL PROPERTY.
	ii - principalis etilaksi		a v hadramienenskappyr en	<b>t</b> e njedju sem njedova
	30 (-Mars 1920 to )			
	7 to 8 to			

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CREDUCE
                                                                           REDUC
      IMPLICIT REAL+8(A-H.O-Z)
      SUBRIUTINE REDUCEICUP , KRED , LAED . LRED . WRF) ...
                                                                           REDUC
                                                                           REDUC
      CUMMON /1XCOM/ XCOM(200), (COM(200)
                                                                           REDUC
                                                                                   5
      CUMMON OJCUR, NOCCUR
                                                                           KEDUC
      COMMUN /IDNUS/ ID1(50), ID2(50)
      CUMMON/IOPT/IPRUC.IN.NCONS.IPNT.IEX.LIMIT.IRAND.....
                                                                      ..... REDUC
                                                                      REDUC
      CUMMON /END/ ITERM
      DIMENSION CUPIZO)
                                                                           REDUC 10
      DIMENSION OCCURIAGOO), NOCCURISO)
                                                                       ... REDUC 11
Ç
                                                                           REDUC 12
           SUBROUTINE REDUCE CAN MULTIPLY ANY SPECIFIED ELEMENT OF THE REDUCE 13
        CCCUR ARRAY BY THE REDUCTION FACTOR WRF AND SET THE FIRST REDUC 14
ELEMENT OF THE CUP ARRAY EQUAL TO ANY SPECIFIED ELEMENT OF THE KEDUC 15
OCCUR ARRAY MULTIPLIED BY THE FACTOR WRF. REDUC 16
                                                                           REDUC 17
                                                                           REDUC 18
                                                                          . REDUC 19.
                                                                           REDUL 20
      12 = 102(1)
                                                                           ALDUG ZI
      IRED = IRED G 1
                                                                           REDUC 22
      IF(IRED.EQ.LRED) GO TO 100
                                                                           REDUC 23
      IF([TERM) 10, 50, 60
                                                                           REDUC 24
Ç
                                                                          REDUC 25
C.
                                                                           REDUC 26
      00 20 I = 1, IN
10
                                                                           REDUC 27
       (F(101(1).EQ.12) GO TO 40 ...
                                                                          REDUL 28
      CONTINUE
20
                                                                           REDUC 29
C
                                                                           REDUL 30
       1F(1CUM(3).EQ.1) GO TO 40
                                                                          . KEUUC 31.
C .
                                                                           REDUC 32
       OCCURITZ) = WRF+OCCUR(12)
 30
                                                                           REDUC 33
       KRED # 0
                                                                           REDUC 34
       GO TU 200
                                                                           REDUC 35
                                                                            REDUC 30
       CUP(1) = WRF+OCCUR(12)
                                                                         ... REDUC 37
       REDUC 38
       GO TO 200
                                                                      REDUC 49
C
  50
                                                                            REDUC 41
        50 MAY BE USED FOR LATER IMPLEMENTATION
C
                                                                            REDUC 42
C
                                                                     REDUC 43
-C---
       GO TO 200
                                                                            REJUC 45
                                                                           REDUC 46
      KHED . 1
                                                                            REDUC 47
     REDUC 48
                                                                        REDUC .49
                                                                            REDUC 50
        KRED . -1
  100
                                                                            REDUC 51
                                                                            REDUC 52
  200
       RETURN
                                                                        REDUC 53
       END
```

11

```
ROSHR .. 1 ...
CROSBRK...
                                                                                                                                                 RUSBR 2
            SUBROUTINE ROSBRK
            IMPLICET REAL*8 (A-H-O-Z)
                                                                                                                                              ROSBR
                                                                                                                                                 AUSER 4
            CUMMON OCCUR. NOCCUR
          1 B(40).GS.GSP.GTP.GSS.GTT.GSB.FZZ.FP.FB.FO.Z.PZZ.TO.RS.SL.ZZZ. KUSBR 6
                                                                                                                                              RIISBR 7
          1011 AXX . EL.
                                                                                                                                                 HUSBK B
           2DELXX.FAK.CXX140:101
                                                                                                                                                 ROSBR
            COMMON/DOPT/E01201
                                                                                                                                                 KUSBK 10
            COMMON/END/ITERM
            COMMON/ TOPT/ IPROC, VMAX, NCUNS, IPNT, 1EX, LIMIT, IRAND
                                                                                                                                                RUSBR 11
            CGMMUN /1XCDM/ XCDM(200), ICOM(200)
                                                                                                                                                RUSBR 12
                                                                                                                 ROSBR 13
            DIMENSION C120,201 ....
                                                                                                                                                  RUSBR 14
            DIMENSION OCCUR(4000) . NOCCUR(30)
                                                                                                                                                 KUSUN 15
             EQUIVALENCE (HHI401).C(1))
                                                                                                                                                 ROSOK 16
            EQUIVALENCE (XCON(1), ALPHA)
            EQUIVALENCE (XCUM(2), BETA)
EQUIVALENCE (XCUM(3), GAMMA)
                                                                                                                                                  RUSBK 17
                                                                                                                                                  RUSBR 18
                                                                                                                                                 ROSBR 19.
             EUUIVALENCE (XCDM(4), DEL) ....
                                                                                                                                                  KUSBR 20
             EQUIVALENCE (XCGM(5), RATU)
                                                                                                                                                  KUSBK 21
             EQUIVALENCE (XCOM(6).TOL)
                                                                                                                                                 RUSUK 22
                                                                                                                                              RUSBK 23
C
C
                       SUBROUTINE ROSBRK ATTEMPTS TO MINIMIZE THE VALUE OF A FUNC- ROSBR 24
 C
                  DESIGN PARAMETERS BY THE ROSENBROCK RUTATING COORDINATE MINI- ROSER 26
 C
                                                                                                                                                  ROSBR 27
                  MIZATION TECHNIQUE.
                                                                                                                                               · RUSBR 28
             NMAX IS THE NUMBER OF PARAMETERS TO BE ADJUSTED. ITS MAXIMUM
                                                                                                                                                  RUSBR 29
 C
                                                                                                                                                  ROSBK 30
             VALUE IS 20.
                                                                                                                                                  ROSOK 31
 C. .
                                                                                                                                                  RUSBK 32
                                                                                                                                                  KOSBK 33
             NTRIA . O
             NSTAG = 0
                                                                                                                                                  RUSBR 34
                                                                                                                                                  RUSBR 35
              INDEX = 0
                                                                                                                                                  ROSBR 36
                                                                         Market gast passed to the control of the control of
 123 -- CALL FEVINMAX. P.U.
                                                                                                                                                  ROSBR 38
              IFI ITERM. NE.O) GU TO 600
                                                                                                                                  . RUSBK 39
                                                                                                                                                RUSBK 40
              IFINTRIA-LE-LIMIT) GO TO 610
             FORMATI 1HO 34HNTKIA GREATER THAN LIMIT IN ROSBRK)
RUSBR 41
RUSBR 42
                                                                                                                                                  RUSUN 44
              GU TO 120
                                                                                                                                                  RUSBN 45
             INDEX = INDEXG1
    610
                                                                                                                                                  KUSUK 40
              IFINTRIA.NE.O) GO TO 103
                                                                                                                                                  RUSBR 47
                                                                                                                                                  HUSBR 48
  Ċ
                                                                                                                                                  RUSBR 49.
              RUSUK 50
              USTAG - U
                                                                                                                                                  KUSBR 51
              UPREV = U.
                                                                                                                                                   ROSBR 52
              NSUCC = 0
                                                                                                                                           RUSBR 53
              MTRIA # L. .....
                                                                                                                                                   KUSBR 54
              DU 104 I=1.NMAX
                                                                                                                                ____ KUSUK 55
  104 E(1) = EO(L)
                                                                                                                                                  RUSBK 50
  C
      C MATRIX IS SET TO A UNIT MATRIX
                                                                                                                                                   KUSUK 57
  C
                                                                                                                                                  RUSBK 58
                                                                                                                                                   KUSBK 59
              OU 105 1=1. NMAX
```

	The state of the s			
	0U 105 J=1,NMAX	HUSBR	60	
	IF(I=J) 106,107,106	ROSHA	61	
100				
100	C(I,J) = 0.00	not an	4.0	
				н
107	(C(I,J) * 1.00	KUSUK		
105	CONTINUE	RUSUA	65	
	N=1	RUSBR	06	
1-4 x 10-11	TO COLD TO BE CONTROL OF THE PROPERTY OF THE P	<b>NUSUA</b>	.67	e With heads have a se
	GU TO 108	RUSBR	68	
C	and the second s	RUSBK	69	
C SE	COND AND SURSEQUENT TRIALS START HERE	RUSBR	70	
C S	COND AND SUBSEQUENT TRIALS, START HERE	RUSHR	71	
		DITEMB	9 %	
1.03	NTRIA NTRIA. &	RIISAR	7 1	
, KO.	1F(U-ULAST*(1.DO&TOL)) 109,109,110	DILL HID	74	to repend
_	1F(U-ULAST*(1.DO&TOL)) 109,109,110	HUCHD	7.6	
C	TOTAL ALCOHOLOGICA STATE METALLINES	KU3 BK	7.3	4 14
C 11	F TRIAL WAS A SUCCESS.START HERE	KUSBK	10	
				* * *
10	F ULAST = U	RUSBR	70	
	NSUCG = NSUCG & -1			111 1 mm 1
	D(N) = D(N) & E(N)	KUSUR	80	
	IFINSUCC.GE.20)-GO TO 50	KUSBK	81	
	E(N) = ALPHA*E(N)	KUSUR	82	
	E(N) = ALPHA*E(N) - GO TO 108	RUSBK	83	
C		RUSBR	84	
-C	1F-TRIAL WAS -A-FAILURE + START-HERE-	RUSBR	85	N National B
		KOSBR		
	WRITE(6,306)NTRIA,N,NSTAG,NSUCC,U,NMAX,(P(I),I=1,NMAX)	ROSak	<b>87</b>	
306	FORMAT(1H024H NTR1A N NSTAG NSUCC19X1HU/ 1H 416,F20.10/1H	RUSBR	88	
	-1 -= 13HP(I) I = 1-TO I3/(1H 6F20.10))	RUSAK	89	
	P(I) = P(I) - DP(I)	RUSISK	91	
	I) w III ACT	DITTIE	39	
	IF(NSUCC) 112,112,113	RUSBA	1	
11	F(N) = -AFTA=F(N)	ROSHE	94	•••
	2 E(N) = -BETA*E(N) GO TO 125	RIISHR	9.5	
50	WRITE(6,922) NSUCC	ROSBR		
	FORMAT(1HO 15HWARNING-NSUCC=::16,1X-22HGDING::TO NEXT VARIABLE)			
C 722		RUSBR		5. 00 00cm
<u>ر</u>				
		RUSBR RUSBR		
	3 E(N) = GAMMA*U(N)	KUS BR	100	
11	AL A MINAY THE CTACE TO COMBLETE	NUS BK	TOT	- 4
G IF	N = NMAX, THIS STAGE IS COMPLETE.	KUSBK.	102	
		KUSBK.	TU3	****
	N=N&L	RUS BR	104	
• 1	D(N) # 0.00 aminor aminor aminor aminor and aminor and aminor and aminor and aminor aminor and aminor		-	
	NSUCC = 0	RUSBR	106	
	GU TO 125			
C		RUS BR.	108	
	- STOPPING-CRITERIA IS APPLIED AFTER 2ND AND SUBSEQUENT STAGES			
C		RUSBR:	110	
	5 IF(NSTAG) 116,116,117	HUSBK	111	11 (0) (1-40)
11	7 ULIM # UPREV - DEL+UPREV	RUSHR.	112	
	IF((UPREV-USTAG)-EQ.O.CO) GU TO 121	KUSBK.	611	
	URAT = {USTAG-ULAS[}/{UPREV-USTAG}	KUSOK		
	IF(ULAST - ULIN1121-121-118	KOS dk	115	
11	R [F(USTAG = ULIM)121.121.119	HUSAK		
11	9 IF(URA) - KATU)120,121,121	KUSUK		
C		KUSBK		
12	) WRITE(6,301)	KUSUK		

and the second	TORNATALIA SCHOOL BON EEADEN IS COMPLETE.)	ROS BR120
01	FORMAT(1HO 26HROSBRK SEARCH IS COMPLETE.) WRITE(6,302) ULAST. (P(1), [=1,NMAX)	ROSBK121
-	FORMAT(1H037HFINAL PERFORMANCE FUNCTION. ULAST = E20.10/1H L20HF1NAL PARAMETERS ARE /(1H 6E20.10))	RUSBRIZZ
3UZ .	PURMATTINOS MITTARE FER MIN AF20-1011	KUSBRIZ3 -
		CALIFFE AND DISCUSS OF MAN A
	FURMAT(1H018HNUMBER OF TRIALS = 15/1H 18HNUMBER OF STAGES = 15)	RUSBRIZS -
303	CO TO AND	ROSBRIZO
	GO TO 600	ROSBR127 -
	RCH IS COMPLETE	KUSBR128
254	RCH 1S COMPLETE	RUS BHIZ9
	RCH WILL CONTINUE IN A NEW COORDINATE SYSTEM.	HOSBHIBI
SEA	UPREV # USTAG	KUSBKLDZ
127	UPREV = USTAG USTAG = ULAST	RUSBRISS
110		
	NSTAG # NSTAGE1	RUSBR135
nes	INE NEW COURDINATE SYSTEM.	KN2RK132
UEF	INE NEW COURDINATE SYSTEM.	RUSBK137
Λ.	WRITE(6,304) FORMAT(1H0 20HC_MATRLX FROM_ROSBRK/)	KUSBK139
	ALL MAN TILL SIME IF	1100011210
200	DU 200 1=1; NMAX   WKITE(6, 205) [C(1, J), J=1, NMAX ]	KU29KI#I
200	FORMAT(12(1x,1PE9.2))	HUSBR142
	PORMAT(12(1X,1PE9.2)) N=1 D(1)= 0.00 NSUCC=0	RUS BK143
167	Disks 0.00	RUSBR144
	NCILL 40	KUS BK 145
100		
100	CUNTINUE WRITE(6,306)NTRIA,N,NSTAG,NSUCC.U,NMAX,(P(I),I=1,NMAX)	RUSBR147
	INE COURDINATES FOR NEXT TRIAL.	RUSBR149
121	5 DU 122 [=1,NMAX	RUSUR150
1.6	5 DU 122 [=1,NMAX DP(1)=C(I,N)=E(N)	RUSUKIDI.
12		
C Arri	2 P(1)=P(1)&DP(1)	HUSBR 153
•	WRITE(6,500)(DP(1), [=1,NMAX)	KUSBA154
	WRITE(6,500)(DP(I); I=1,NMAX) WRITE(6,501)NMAX, (P(1), I=1,NMAX)	KUSBRIDD
	WALTE (6.503) N. E(N)	ROSBKISO
500	WRITE(6,503) N.E(N) FURMAT(1H014HIN ROSBRK DP =/(2H 1P6E20.7))	ROSBRIST
501	ENWEAT (1HO) 3HP(1) [ = 2 TO 13/(1H 1P6E20-7))	RUSBRIDE
503	FURMATI HOL 3HP(I) [ = 2 TO 13/(1H 1P6E20.7)) FORMATI HOL 13HIN ROSBRK N = 13.2X6HE(N) = E20.10)	RUSUK159
203	in the second se	MASOUTAG
600	RETURN	KOSBRIGI
	END	KNZGKTQS

I-704

```
ROTAT .... 1
       IMPLICIT REAL *B (A-H.O-Z)
                                                                      TATOR
     SUBROUTINE-ROTATE (DERIV, LP)
                                                                      KUTAT -
                                                                      RUTAT
C.
                                                                      RUTAT ... 5
     REAL+8 .MX .MY .MZ .....
                                                                      ROTAT
     REAL*8 NUMER1.NUMER2
                                                                      ROTAL.
     DIMENSION TABIX(50), TABIX50), TABZ(50), OCCUR(4000), NOCCUR(30),
                                                                      RUTAT
                                                                             Q
               RUTAT 10
     DIMENSION XNR(25), XN1(25)
                                                                      RUTAL LL
C
                                                                      ROTAT 12
     EQUIVALENCE
  ---- 1(OCCUR(001) + AREF -- ) + (OCCUR(002) + ALPHA- ) + (OCCUR(003) + ALPRIM) + --
                                                                      RUTAT 13...
     21UCCURIO121, CNALP 1, (OCCURIO13), CMALP 1, (OCCURIOL5), CD 1.
                                                                      RUTAT 14
                                         1.(OCCJR(027).G
                                                              ).
                                                                      RUTAL 15
     3(DCCUR(020),CMQ ),(OCCUR(021),D
                                           ),(UCCUR(044),PHI
                                                             ),
                                                                      RUTAT 16
                      1, ( UCCUR ( 043) . P
     4(UCCUR(042),PI
    - 5(OCCUR(045)+PS1 -- )+(OCCUR(050)+Q
                                           1.(UCCUR(051).00 ...).
                                                                      RUTAT 17
     6(UCCUR(055),RHUINF),(UCCUR(056),RHUENI),
                                                                       RUTAT 18
    -7(UCCUR(065).SMR ....).(UCCUR(071).THEALP).(UCCUR(075).T. .....).
                                                                      RULAT 19
     BIUCLUR(077), TCRIT ), (UCCUR(078), TECON ), (UCCUR(081), SMF ),
                                                                       RUTAT 20
                       ). (UCCUR(084).W ). (UCCUR(090).XBAR...).
                                                                       RUTAT 21
    49(00CUR(082),V
                                                                       RUTAT 22
     XCOCCUR(C91).Z
                                                                     ' RUTAT 23
     POUTVALENCE
                       1, (OCCUR(113), THEALO), (OCCUR(122), ALST ).
     1(UCCUR(108).20
                                                                       RUTAT 24
   ___2(UCCUR(130)+ALWIG2)+(UCCUR(131)+ALBARP)+(UCCUR(202)+CM____)+__
                                                                       RUTAT 25
                     ), (OCCUR(210), MX ), (OCCUR(211), MY ),
                                                                       RUTAT 20
     3(OCCUR(203) . CN
                                                                       RUTAT 27
                       1.(OCCUR(221).SINGO 1.(OCCUR(229).ALALI...).
     4(UCCUR(212), MZ
                      ),
                                                                     · ROTAT 2B
     510CCUR(237), XUP
     6(OCCUR(894), TABI(1)), (OCCUR(944), TABIX(1)), (OCCUR(994), TABZ(1))
                                                                       KOTAT 29 ...
                                                                       ROTAT 30
C
                                                                       ROTAT .. 31
----- FOULVALENCE -- --
     1(NJCLUR(04), MAXTAB), (NGCCUR(07), LOPT )
                                                                       RUTAT 32
                                                                       KUTAT 33
C
                                                                       KUTAT 34
      COMMON OCCURINOCCUR
                                                                       RUTAT .35
C
                                                                       RUTAT 36
C
                                                                       RUTAL 37
                                                                       ROTAT 38
С
       ..... SUBROUTINE ROTATE CALCULATES THE ANGLE OF ATTACK BY ONE UP
                                                                      . RUTAT 39
     TWO METHODS DEPENDING ON THE VALUE OF THE INPUT LOPT.
                                                                      RUTAT 40
    LUPT = 0 IS AN UNCOUPLED THREE DEGREE OF FREEDOM CALCULATION .... RUTAT 41
      LOPT = 2 IS A SIMPLIFIED ANGLE OF ATTACK SOLUTION REQUIRING NO RUTAT 42
                                                                     .... RUTAT. 43 ...
       ....INTEGRATION....
           THE FOLLOWING DERIVATIVES ARE CALCULATED IN THIS SUBROUTINE -ROTAT 44
                                                                     ... ROTAT 45
           DERIV(8)=PSI..OUT. ..
                             RUTAT 40
           DERIV(9)=THEALP DOT
                                                                     .. KUTAT 47
          DERIV(10)=PHI DOT.
          DERIVITIES DOT
                                                                       RUTAT 48
                                                                      RUTAT 49
      ..... DERIV(12)=SMR-DOT----
        DERIV(13)=P DOT
                                                                       RUTAT 50
C
                                                                      . KUTAT 51 ..
                                                                       RUTAT 52
C
                                                                     RUT AT. 53
          TESTING LOPT
 C
                                                                       ROTAT 54
     IFTLUPT.EQ.01GO TO 8
         FOR A NON-ZERO VALUE-OF-LOPT-THE DERIVATIVES ARE ZEROED. .... KUTAT 50
      DU 9 J#3.13
                                                                       KUTAT 50
                                                                       KUTAT 57
     9 DERIVIJ1=0.00
      IF(LUPT.EQ.21GO TO 15
                                                                       KUTAT 58
                                                                       RUTAL 59
       RETURN
```

```
..... FOR LOPT=O USING-A-THREE DEGREE- OF-FREEDOM IN ROTATION METHODRUTAT 61
        WHICH CALCULATES THE DERIVATIVES WITH RESPECT TO TIME UF THE
                                                                  AUTAT DE
        EULER ANGLES - PSI, THETA SUB ALPHA. AND PHI - AND UF THE
                                                                   Ed TATUS
        ANGULAR VELOCITIES - P.Q.SMR.
                                                                   RUTAT 64
                                                                   HUTAT 65
   A CONTINUE
          TRIGONOMETRIC FUNCTIONS OF THE EULER ANGLES.
                                                                   RUTAT 66
  BO TATUR
     COSP#COSLPHIA
                                                                  RUTAT 59
     SINI*SIN(PSI)
     COSI=COSIPSI)
                            RUTAT 71
     SINL*SIN(THEALP)
          COST THEALP) ROTAT 72
CALCULATION OF THE DERIVATIVES OF THE EULER ANGLES, WHERE KOTAT 73
     COSL=COSLTHEALP)
        DERIV(8)=PSI DOT, DERIV(9)=THETA SUB ALPHA DOT, DERIV(10)= RUTAT 74
C
                                                                   RUTAT 75
        PHI DOT.
     DERIVIB)=(SMR+COSPEQ+SINP)/COSL
     DERIV(9)=Q*COSP-SMR*SINP
                                                                   RUTAT 77
                                                                   RULAT 78
     DERIVITO = PEDERIVIS + SINL
                                                                 .... ROTAT 79.
     COSLP=COSL+COSI....
         DETERMINATION OF THE ANGLE OF ATTACK FROM THE ARCCOSINE OF RUTAT BO
     THE PRODUCT - COS(THETA SUB ALPHA)*COS(PSI). RUTAT 81
IF(CUSLP.LT.O.DO)GJ TO 100 RUTAT 82
C
                                                                   KUTAT 82
                                                                   RUTAT 83
      ALPRIM= ACOSKICOSLP)
                                                                   RUTAT 84
      CN=CNALP+ALPRIM
                                                                   .. RUTAT 85
     60. TO 4
                                                                    ROTAT 86
  100 WRITE(6,1011
  101 FORMAT(1HO LOX, 76HTHE ARGUMENT OF ALPRIM IN SUBROUTINE ROTATE IS NEULAT 67
                                                                    KUTAT 88
     LEGATIVE. GOING TO NEXT CASE.
                                                                    ROTAT 89
      1 0=6
      RETURN
                                                                   ROTAT. 91
          MOMENTS OF INERTIA ARE DETERMINED FROM THE INPUT TABLES.
                                                                    RUTAT 92
                                                                    KUTAT 93
    4 CONTINUE
                                                                    RUTAT 94
       UI=TABLE(Z.TABZ. TABI.MAXTAB.LL)
UIX=TABLE(Z.TABZ.TABIX.MAXTAB.LL)
                                                                    ROTAT 95
                                                                    KUTAT 96
                                                                  ... KUTAT 97.
      IF(UI.EQ.0.000)60 .TO. 13 . ........
                                                                   RUTAT 98
      IFIUIX.EQ.O.ODOJGO TO 14
                                                                    ROTAL 99
    6 CM=CMALP#ALPRIM
                                                                    RUTATIOO
         CALCULATION OF DERIVATIVES OF THE ANGULAR VELOCITIES, WHERE RUTATION OF DERIV(12)=SMR DOT, AND DERIV(13)=P DOT.
C
                                                                    RUTATIOS
      TENIROD PAREFOOVUI
                                                                    KUI AT 104
      TEN2=0.00
    IF(ALPRIM.NE.O.DO)TEM2=CM/SIN(ALPRIM) .....
      TEMS-SINL +COSI
      TEN4+0.500+0+CMQ/V
                                                                    ROTAT107
                                                                    RUTAT108
      TEMS=(UI-UIX)*P/UI
      DERIVILLITEMI + (TEM2+ (TEM3+COSPGSINL+SINP) & TEM4+Q) & TEM5+SMR&MY/JI . KUTAT109
      DERIV(12)=TEM1+(TEM2+(SIN1+COSP-TEM3+SINP)&TEM4+SMR)-TEM5+QGMZ/JI KUTAT110
                                                                    KUTATILL
     DEKIV(131=MX/UIX
                                                                    ROTATILL
                                                                    KUTAT113
     IFIXBAR.LT. XUPIGU TO.10
   11 ALPHA=ALPRIM
                                                                    RITATALA
                                                                    ROTATILS
     RETURN
           IN NON-CONTINUUM FLOW REGIME, PERIOD OF THE CYCLE IS TESTED KULATILT
   TO DETERMINE APPROPRIATE ANGLE OF ATTACK FOR USE IN DRAGCO.
                                                                    RUTATILB
                                                                    RUTATLLY
```

```
IF(T.GE.TCRITIGO TO 11
-IF(T.GE.TECUN)GJ-TO-12
                                                                         ROTATION
                                                                        RUT AT LEA.
      IF(P.EQ.O.)O)ALPHA=2.DD*ALWIG2/PI
                                                                        KOTATIZZ
      IFIP.NE.O.DOJALPHA=O.5DO*(ALWIGZGALBARP)
                                                                        RUTAT123
                                                                         RUTAT 124
     GO TO 12
                                                                         RUTATI25
                                                                         RUTATIZO
C
                                                                        KULATIZ7
C -
         SIMPLIFIED ANGLE OF ATTACK SOLUTION WHICH REQUIRES NO
C
                                                                        RUTATIZE
       CALCULATION OF DERIVATIVES OR SUBSEQUENT INTEGRATION.
                                                                         RUTATIZA
   15 LL=-1
                                                                         RUTATIO
      IF(Z.LE.100.000)G0 TO 90
                                                                        RUI AT 151
                                                                         KUTAT132
      UI=TABLE(Z, TABZ, TABI, MAXTAB, LL)
      IF(U1.EQ.0.0D0)G0 TO 13
                                                                    ...... Rul Al 133...
                                                                         RUT AT 134
      BETAZ = - DLUG (RHUIN 1/0.07647400)
      IF(dETAZ.LE.0.000100)8ETAZ=0.000100
                                                                         KULAT 145
                                                                        RUI AT136
      IF(Z.EQ.ZO)CD=0.8
      AK1=AREF+G+Z+12.0D0+CD+CNALP&CMU+D+D+W/(UI+G))/
                                                                         RUTAT137
     1(4.0D0*BETAZ*W*DABS(SINGO))
                                                                         RUTAT13B
    ---AKZ=AREF*G*Z*Z*((CNALP-_L)*BETAZ*DABS(SINGO)/Z-CMALP*D*W/(UI*G)]/_RUTAT139
     1(2.000*W*(BETAZ*SINGO)**2)
                                                                         RUTAT 140
   17 CONTINUE
                                                                         KUTATIFI
      THAR=-2.000*PI*L/(BETAL*V*SINGO*DSQRT(AK2*RHUINF))
                                                                         RUTAT142
      IFITBAR.LE.TECONIGO TO 16
                                                                         RUTAT143
      IF(TBAR.LT.1.0D-10)GU TO 16
                                                                         ROTATI+4
                                                                        KUTAT145
OSCILLATORY SOLUTION FOR CYCLE TIMES, THAR, GREATER THAN
C
                                                                         RUT AT 140
C
         TECON.
                                                                         RUTAT147
      SMF=1.0D0/TBAR
                                                                         RUTAT148
      TEM=2.000 +USQRT ( (AK1&AK2) *RHO[NF)
                                                                         KUTAT149
      CALL BESSEL(TEM.O.OUO,1.OU-5,10.XJR.XJI.1)
                                                                         RUI AT 150
      CALL NEUMAN(1.0U-5, TEM, 0.000, 10, 1.001, XNR, XNI, XJR(1), XJI(1), XJR(2) (U) AT151
     1.XJ1(2),1)
                                                                         RUI AT 152
      IF(Z.NE.ZO)GO TO 2
                                                                         KUTATION
      DTEMUZ =-0.500*TEM*dETAZ/Z
                                                                         ROTATI54
      DENAC2=OTEMUZ*(-XNR(2)*XJR(1)&XJR(2)*XNR(1))
                                                                        RUTAT 155
      NUMERT = (XJR(1) *AKI*THEALO*2.3769D-3*BETAZ)/(Z*JEXP(AK1*RHO1NF&
                                                                        RULAT 156
     . TRETAZII
                                                                ...... RUIAT157
      NUMER2=THEALO+UTEMDZ+(-XJR(2))+DEXP(-AK1+RHOINF)
                                                                         KUT AT 158
      ACZ=[NUMER1-NUMER2]/DENAC2 .
                                                                        RUTAT159
      AC1=(THEALO*DEXP(-AK1*RHUINF)-AC2*XNR(1))/XJR(1)
                                                                         RUTATIO
      ALALI=DEXP(AK1*RHOINF)/DSQRT(PI*DSQRT(AK2*RHOINF))
                                                                     RUTATIOL
    2 CUNTINUE
                                                                         RUTAT Lb2
   --- ALPKIM=DEXP(AK1*RHJINF)*(AC1*XJR(1)&AC2*XNR(1))
                                                                   CN=CNALP*ALPRIM
                                                                        KOTAT164
    --- CM=CMALP*ALPRIM .....
                                                        RUTATIOS
       ALPHA=ALPRIM
                                                                        RUTATION
       RETURN
                                                                        KUTAT167
Ċ
                                                                         RUTATION
          . ENVELOPE ANGLE DE ATTACK CALCULATION FOR TBAR LESS THAN OR KUTATIO9
-.
C
         EQUAL TO TECON.
                                                                         RUTATITO
   16 ALALO=DEXP(AK1+RHUINF)/DSQRT(PI+DSQRT(AK2+RHOINF))
                                                                        RUTATIVI
      IF(/.EQ.ZO)ALAL[=ALALO
                                                                         RUTAT172
     ALPKIM=0.63661D0+THEALC+ALALO ....
                                                                         RUTAT173
      ALPRIM=ALPRIM/ALALI
                                                                         KUTAT174
     - SMF = 0.000
                                                   KUTATI75
C
                                                                         KUT AT 176
           IF ANGLE OF ATTACK ENVELOPE VALUE IS LESS THAN OR EQUAL TO
                                                                         RUTAT177
          ALST, INPUT ALPHA STOP VALUE, THE TRAJECTORY IS SWITCHED OVER RUTATITAL
         TO A PARTICLE TRAJECTORY, LUPT=1, AND ANGLE OF ATTACK IS SET
```

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na	IFLALPRIM.GT.ALSTIGO.TO.92	ROTALIBI
90	ALPRIM=0.000	RUT AT 182
	LOPT#1 - Harris District Section Control Contr	
92	CONTINUE	RUTATL64
	CN=CNALP*ALPRIN	RUI AT 185
	CM*CMALP*ALPRIM	RUTATIS
	ALPHA=ALPRIM	RUTATIO
12	RETURN	
13	WRITE(6,1013)Z	RUTAT190
	L Pa b	
	RETORN	RUTAT192
14	WRITE(6:1014)2	RULATIO
		KOTAT194
	FURMAT(1HO 10X.37HRESULT OF TABL LOOKUP IS 0.000 FOR Z=E12.5)	
1013	FORMAT(1HO 10X,38HRESULT OF TABLE LOCKUP IS 0.000 FOR Z=E12.5)	RUTAT196 RUTAT197
	TO SERVICE AND COMPANIES OF THE PROPER PROPERTY OF THE PROPERT	Audense den Eine
	1 (12 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1 (1 ) 1	
	x × 1 b − cool = classapron (pq:strict) = ste − (p − p − p − p − p − p − p − p − p −	
	To Compare the service of the contract of the	nd som blegde – som southern Born office for Hill R. F
		w + ( i) - +
	HE IN THE PROPERTY OF THE PROP	h
), ( n ) pr 1 or 100		ne Mart Handle Statem & top our college designation of
	and the second of the second o	W-1 1 91 -
	11 . We also an appropriate the second secon	in the common times
100	**** **** *** *** **** **** **** **** ****	
	The second secon	
	A CONTRACTOR OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PARTY OF THE PROPERTY OF T	* Mark - 10 - 10 - 10 - 10
		A
		++ -1

RUTATIBO

CZAVE	• • •	SAVED 1
	IMPLICIT REAL+8(A-H+O-Z)	SAVED 2
	SUBROUTINE SAVEDVIK, DVAR, OCCUR)	SAVED 3
	DIMENSION DVAR(50), OCCUR(4000)	SAVED 4
C		SAVED 5
C		SAVED 6
C	SUBROUTINE-SAVEDY STORES THE VALUES OF OCCUR(133-145).	SAVED7.
Č.	GCCUR(205-209), AND GCCUR(222) IN LOCATIONS DYAR(1-19)	SAVED 8
č.	- RESPECTIVELY AND LATER RESTORES THESE VALUES TO THE UCCUR	SAVEJ 9
č	ARRAY.	SAVED 10
č		SAVED 11
Č.		SAVED 14
	The Kind Kontrol of the Control of t	
	GO TJ (100,200), K	SAVED 14
100		SAVED 15
111	DVAR(I) = OCCUR(I&132)	SAVEU 10
	· 00 112 1 = 14, 18	SAVED 17
112	DVAK(I) = OCCUR([6191)	SAVED 18
	- UVAR(19) = OCCUR(222)	
	RETURN	SAVED ZO
300	- DI) 222 [ = 1, 13	SAVED 21
222	UCCUR([6132] = DVAR(1)	SAVED 22
		SAVED 23
223	OCCUR(16191) = DVAR(1)	SAVED 24
223	OCCUR(222) = DYAK(19)	CAVED 25
	RETURN	SAVED 20
	END	SAVED 20
	END	SATED E
- 1		
	I C. C. LILLE NOW 1.17 (OR 1961 W. W. 1) the two with 1/10 species absorption region of the color to the color of the color to the colo	
	to the contract of the second	
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ph 1000111	The state of the s	FIRST 184 BA - 1811111 BA -
- • •	and the second section in particular interesting the constitution of the second section in the section in the second section in the section in the section in the section is a section in the se	Note that the second se
* 941		

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SCHEE. 1 ...
CSCREEN ----
                                                                              SCREE
      SUBROUTINE SCREENIN.X, ISUC. VAL.DI
                                                                              SCREE
      IMPLICIT REAL+8(A-H,O-Z)
      REAL +8 LA1.LAZ, LA1F, LAMDAL, LAMDAZ, LAMD1F
                                                                              SCREE
                                                                            .. SCREE
      COMMON OCCUR NUCCUR
                                                                              SUREE
      CCMMON/MULT/SMULT(25)
                                             A(25) . DC CUR(4000) . ...... SCHEE . . 7
      DIMENSION PENLIVI251.
                                                                              SCHEE
                                                                                     В
     INDCCURT301
      EQUIVALENCE (DCCUR(42),PI),(DCCUR(102),TO),(JCCUR(108),ZO),
                                                                              ECREE
     1(DCCUR(121),ZST),(DCCUR(123),TST),(NOCCUR(15),NGEOM),
                                                                              SCREE 10
                                                                              SCREE 11
      2(NOCCUR(22),NTHRST)
                                                                              SCREE 12
       EQUIVALENCE
     1(UCCUR(170).wlf).(OCCUR(150).THET1F).(OCCUR(159).RN1F).
                                                                            ... SCREE 13
      2(OCCUR(147), RB1F), (OCCUR(151), LAMD1F), (OCCUR(146), LA1F)
                                                                              SCREE 14
       REAL*8DLL(25)/4*0.00,2*3.00.2*4.D0,-10.D0,14*0.D0/
                                                                              SUREE 15
                                                                              SCREE 10
       FUULVAL ENCE
                                                                              SCREE 17
                          ),(JCCUR(134),THETA1),(UCCUR(135),RNI
      ICHCLURI 1331 . WI
      2(UCCUR(136),RB1 ),(OCCUR(137),LAMDA1),(OCCUR(138),LA1
                                                                              SCHEE 18
                                                                     ).
      3(OCCUR(139).W2 ____), (OCCUR(140).THETA2), (OCCUR(141).RN2
                                                                    .... SCREE 19
                                                                              SCREE 20
      41 UCCUR(142) + RB2 ) + ( UCCUR(143) + LAMDA2) + ( UCCUR(144) + LA2
                                                                               SCHEE 41
      SIOCCUR(145) .ZTURN)
                                                                               SCREE 22
       EQUIVALENCE (OCCUR(222), ISP)
                                                                              SCREE 23
       FULL VALENCE
      310CCUR(205), ZUN ), (OCCUR(206), ZOFF ), (OCCUR(207), THO ), 410CCUR(208), TUN ), (OCCUR(209), TOFF ), (OCCUR(210), MX )
                                                                               SCKEE 24
                                                                               SCREE 25
       REAL +8DUL (25)/2+10000.00, 2+.600, 2+468.00, 40.00, 40.00, 17+0.00/
                                                                               SCREE 26
       REAL #4M(25)/135,141,137,143,138,144,134,140,145,137,222,205,208,
                                                                               SCREE. 27
                                                                               SCREE 28
      1206.209.1041/
                                                                               SCREE 29
 C
                                                                               SCKEE 30
 C
            SUBROUTINE SCREEN TESTS THE VALUES OF UP TO TWENTY-FIVE
                                                                               SLALE 34
           ELEMENTS OF THE OCCUR ARRAY TO DETERMINE WHETHER THESE VALUES
                                                                               SCHEE 32
 ¢
           LIE WITHIN PRESCRIBED LIMITS. IF ANY VALUES LIE GUTSIDE THE
                                                                               SCKEE 33
           PRESCRIBED LIMITS. A QUANTITY E IS CALCULATED AS A MEASURE OF
 ¢
                                                                               SCREE 34
 C
                                                                               SCHEE 35
 ¢
           ERROR.
                                                                               SCHEE 30
 C
                                                                               SCREE 37
                                                                               SCREE 38
        00 2 1 = 1,25
                                                                               SCREE 39
        PENLTY( 1) =0 .00 :
                                                                               SLREE 40
          A111=0.00
                                                                               SCHEE 41
          A(1)=1.00
                                                                               SCREE 42
          A(3)=1.00
                                                                               SCREE 43
          A(5)=1.00.
                                                                               SCREE 44
          A(71=1.00
                                                                               SCREE 45
          A(91=1.00
                                                                               SCREE 40
         DLL(12)=20FF
                                                                               SCREE 47
        DLL(14)=ZST
                                                                                SCREE 48
                                                                                SCREE. 49
        DLL (15) = TON
                                                                                SCHEE 50
        DUL (91=20
                                                                                SCREE 51
        DUL ( 10) = #1
                                                                                SCREE 52
        DUL ( 11 )=10000-00
                                                                                SCKEE 53
        DUL(12)=20 ....
                                                                                SCREE 54
        DUL(13)=TOFF
                                                                            SCREE 55
        OUL ( .4) = LON ...
                                                                                SCREE 56
        DUL(15)=TST
                                                                                SCREE 57
        1F(ZTUKN.LT.0.D0)63.T0 10 ..... ...
                                                                                SCREE 58
        Di) B L= 2,10,2
                                                                                SCHEE 54
        A111=1.00
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	The contract of the contract contract and contract contract and contract co	. Y
10	IF(NTHRST.EQ.0)GO TO 15	SCREE 60
	- A ( ) A ( ) B A D D - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m - 1 m -	SCREE DI
	IF(NTHRST.EQ.2)GO TO 12 A(12)=1.00	SLKEE 62
	A(12)*).00 %	- SCREE 63
	A(14)=1.00 - GO TO 15	SLKEE 04
	- GO TO 15	SCREE 65
12	A(13) = 1.000	SCREE OO
the arts a representation	A(15) = 1.000 $A(15) = 1.00$	SCREE AZ
~		Charles and
- Č		CCDE- 40
č		SCREE 70
16	IF(NGEON=2) 18, 20, 40 LANDA1 = RN1/RB1 IF(ZTURN.GE.O.DQ)_LANDA2 = RN2/RB2	SCACE TO
10	I TANDAT - DAY 101	SUKEL 11
6.0	LETTION CE O DOS LANGAS - DAS 1883	SUNCE 72
# + 1/4/ T		
	GO TO 25	SCREE 74
	RNI = LAMCAI*RBI	SCREE 75
25	IFIZTURN.LT.O.DO)GD TO 30 kNZ=LAMDA2*RB2	SUREE 76
• 1	KN2=LAMDA2*RUZ	SUREE 77
	TR=0.01745329UO*THETA2	SCREE 78
-	- 215=D2[N(1K)	
	CT2=DCOS(TR)	SCREE BO
F 1 10 11	LAZ=(KN2*ST2+RN2&R32*CT21/ST2	SCREE 61
30	TR=0.01745329U0+THETA1 ST1=DS[N(TR)	SCKEE 82
	- STI=DSIN(TR)	SLREE 83
	C 71 3C/4C/ 741	a process of the party
	LAI=(KN1*STI=RN1ERSI*CII)/STI	SCREE 85
	00. 00. 00.	SCREE BO
40	GU TO 200 LAMLA1 = RN1/RB1 TEM=LA1-RN1	SCREE 57
40	Tede (Al-WN)	COLUE OF
	TEM=LA1-RN1 TEST=TEM*TEM-RN1*RN1&R81*RB1	CORE OF
	IF(TEST.LT.0.0D0)GJ TO 50	SCREE 90
	THETAL=180.DO*ASINK((~(!Al=RN1)*RN1&RB1*DSQRT(TEST))/(TEST&RN1*	OMICENCE O.
	1) \/PI	
		SCREE 92
		SCREE 93
30	THETA1=0.D0 IF(ZTURN.LT.0.D0)GU-TU-200	SCREE 94
- 60	LF(ZTURN.ET.0.D0)GU-TU-200	SCHEE 95
	LAMUA2 = RN2/RB2 TEM=LA2-RN2	SCREE 96
Own at each	TEM=LA2-RN2	SCRE& 97
	TEST=TEM*TEM-RN2*RN2&RB2*RB2	SCREE 98
	1F(TEST-LT-0-D0)GO-TO 70 (4)	SCREE 99
	THETA2=180.00*ASINR((-(LA2-RN2)*RN2&RB2*DSQRT(TEST))/(TEST&RN2*	XN2SCREELOO
1.4	111/P[	SCREETOT
	GD 1D 200	SURFEJUS :
70	THETA2=0.00	SCKEELDS
Ç		SCREE104
C	Complementation of the	SCKEE105
C		SCREELDO
.200	E = 0 • 100	. SCREETO7
	00 100 1 1 00	At all the Pt. S. B. At all
resum name op man de	IZ=M(I)	SCREE 109
	I + (OCCUR(17) - GT - DLL(11) GO TO 250	SCREELLO
** 1 **	PENLTY([]=A(-1)*SMULT([)*DABS(OCCUR(12)+DLL(1))**2	SCREELL
	GU TO 500	SCKEE112
250	IF(UCCUR(12).LT.DUL(11)GD. TO. 500	SCHEETTA
2.70	PENLTY(1) = A(1) + SMULT(1) + DABS(OCCUR(12) - DUL(11) + +2	SCREELLS
600	E=ELPENLTY(1)	
	Land M. P.	
C C	•	SCREELLO
i,	LETE ME O DOLCO TO ADD	SCHEELL 7
	IF(E.NE.O.DO)GO TO 600	SCREEL116
	1 SUC=0	SCREETT&

	WB 10 700	SUKEE120
C .	The state of the s	SCKEE121
600		SCREELZZ
	write(6,450)P1,T0,Z0,ZST,TST,NGEOM,NTHRST,W1F,THET1F,RN1F,RB1F,	SCREE123
	**LAMDIF, LAIF, W1, THETA1, RN1, RB1, LAMDA1, LA1, W2, THETA2, RN2, Rd2, LAMDA2,	SCHEEL24
	2LAZ.ZTURN.ISP.ZON.ZUFF.THO.TON.TUFF.(PENLTY(I).I=1.25)	SCREELZS
	VAL=E40	SCREELZO
•	* P & W & W & W	SCREETE 7
WAA	The state of the s	* * * * * * * * * * * * * * * * * * *
700	CUNTINUE	SCHEELZB
C		SCHEE129
	RETURN	SCKEE130
C	e time to determine the superior to the contract of the contra	SCREELSI
450	FORMAT(1H1 13X*PI*,13X*TO*,13X*ZO*,12X*ZST*,12X*TST*,10X*NGEOM*,	SLKEE132
*1 *	1 9X'NTHRST'-12X'W1F'/1h_1P5E15.7,2[15,E15.7/	SCALELS3
	21HO 9X'THETIF', 11X'RNLF', 11X'RB1F', 9X'LAMDIF', 11X'LAIF', 13X'WL',	SCREEL34
	3 94 THETA1 -12X KN1 1/1H 1PBE15.7/	SUKEELSS -
	41H0 12X'RB1', 9X'LAMDA1',12X'LA1',13x'W2', 9X'THETA2',12X'RN2',	SCREET30
		,
	512X'RH2', 9X'LAMDA2'/1H 1P8E15.7/	SCREELS 7
	61HO 12X'LA2',10X'ZTURN',12X'1SP',12X'ZGN',11X'ZOFF',12X'THO',	SCHEELSO
* ****** * ***		SCKEELS9
	1(iH 1P8E,5.7))	SCREE140
	END	SCREEL+1
		*
THE PERSON IN COMMERCE SEC. 1		## · * · · · · · · · · · · · · · · · · ·
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C$R2490 - --
                                                                                    ---- SR449
       SUBROUTINE SR2490
       SUBROUTINE SR2490

IMPLICIT REAL+8 (A-H, O-Z)

SK249
       COMMON OCCURINOCCUR
     COMMON OCCUR:NOCCUR

CUMMON /CPCCUR/ PCCUR(11770)

SK249

CCMMON /CICCUR/ IOCCUR(320)

SK249
       COMMON /CICCUR/ IOCCUR(320)
      -KEAL+8-ISP+MW-----
                                                                                         SR249 7
       DIMENSIUN A(514) . B(21), AA(27) . COOWN(16) . CHIGH(16) . IOP(90) SK249
       DIMENSION NEUMOV(50), NUCCUR(30 ). CCCUR(4000)
                                                                                             SR24+
                                                                                           5R249 10
        DIMENSION NPV(160)
       DIMENSION TABLE(50), TABLE(50), TABLE(150), TABLE(150) ...... SR249 11
      EQUIVALENCE (UCCUR(3011,A(1))
FOUTVALENCE (UCCUR(122),ALST)
SR249 12
       EQUIVALENCE (UCCUR[823],B(1))
                                                                                             SK249 14
      LOUIVALENCE (OCCUR(115),C)
EQUIVALENCE (OCCUR(19),CAPG)
                                                                                             SK249 15
                                                                                             SK249 16
    EQUIVALENCE (OCCUR(3549),CJOWN(1))

EQUIVALENCE (OCCUR(3533),CHIGH(1))

EQUIVALENCE (OCCUR(3533),CHIGH(1))

EQUIVALENCE (OCCUR(367),DELIN)
     EUUIVALENCE (UCCUR(185), FACTRI)
                                                                                             SHE49 EL
      EUUIVALENCE (UCCUR(28),GAMMA)
                                                                                             5KZ49 22
      EQUIVALENCE (OCCUR(222), ISP)
                                                                                             SK244 23
       EQUIVALENCE (UCCUR(4000), LP)
                                                                                             58247 24
                                                                          30277 L7
3K249 Z3
     EQUIVALENCE (OCCUR(117).MW)
       EQUIVALENCE (OCCUR(421,P1)
                                                                                             5K444 20
       EQUIVALENCE (OCCUR(57),R)
EQUIVALENCE (OCCUR(63),RE)
                                                                                            SK249 27
       EQUIVALENCE (DECUR(63), RE)

EQUIVALENCE (DECUR(116), SIG)

EQUIVALENCE (DECUR(3033), TABIX1(1))

EQUIVALENCE (DECUR(3033), TABIX2(1))

EQUIVALENCE (DECUR(3083), TABIX2(1))

SK249 31
       FOUTVALENCE (UCCUR(2933), TABI1(1))
FOUTVALENCE (UCCUR(2983), TABI2(1))
                                                                                             5Kc49 32
                                                                                             SKETT 33
       EUUIVALENCE (OCCUR(78), TECUN)
                                                                                             5KZ44 34
       EQUIVALENCE (UCCUR(132), TINIT)
                                                                               SK247 35
       EUUIVALENCE (UCCUR(123),TST)
                                                 Sk249 36
       EQUIVALENCE (UCCUR(148), TWST)
       FUUIVALENCE (OCCUR(149), TWL)
                                                                                             5K449 38
       ENUIVALENCE (OCCUR(108),THZ)
                                                                                             SK249 39
       EDULVALENCE (OCCUR(230), XLOW )
                                                                                            SK249 40
      EDUTVALENCE (OCCURT 237), XUP J
FOUTVALENCE (OCCURT 240), X1LJW) SR249 42
FUUTVALENCE (OCCURT 239), X1UP ) SR249 43
EQUTVALENCE (OCCURT 120), ZBAR) SR249 44
EQUTVALENCE (OCCURT 13), ZETA) SR249 45
EQUTVALENCE (OCCURT 118), ZPR1) SR249 45
EQUTVALENCE (OCCURT 145), ZTURN) SR249 46
EQUTVALENCE (OCCURT 145), ZTURN) SR249 47
EQUTVALENCE (NUCCURT 17), LUPT) SR249 48
EQUTVALENCE (NUCCURT 21), MATLN 13
                                                                                            5KZ49 41
      EDUIVALENCE (NUCCUR(21).MATLN2) SK249 50 SR249 51
      EQUIVALENCE (NOCCUR(17), MXTAB1)

EQUIVALENCE (NOCCUR(17), MXTAB2)

EQUIVALENCE (NOCCUR(15), NGEUM)

EQUIVALENCE (NOCCUR(14), NPRINT)

EQUIVALENCE (NOCCUR(22), NTHKST)

EQUIVALENCE (NOCCUR(11571), AA )

EQUIVALENCE (PCCUR(11571), AA )

EQUIVALENCE (TUCCUR(309), IMPLOT)

FOUTVALENCE (TUCCUR(00001), TOP )

EQUIVALENCE (TUCCUR(00001), TREF )

SR249 58
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EQUIVALENCE (IDCCUR(00302), LPLOT)
EQUIVALENCE (IDCCUR(00304), NCP...)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SR249 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SR249 01
                                              EQUIVALENCE (ICCCUR(00091), NCOMDV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5x249 64
                                              EQUIVALENCE (IOCCUR(80305), PDSSS.
EQUIVALENCE(IOCCUR(003C6), NDVCH )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SR249 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SK449 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              54249 05
                                               EQUIVALENCE (IUCCURTOO141), NPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SK249 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SK449 67
      Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SKZ4Y OB
       C
                                                                               SUBROUTINE SR2490 PRESETS THE VALUES OF MANY OF THE INPUT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SR249 09
                                                                  VARIABLES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SK247 70
       Ç,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SH249 71
       C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SK644 72
                                            SK44 73
                                               OCCUR(1) = 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SK447 74
        1.1
                                               CONTINUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SK249 75
        C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SK249 76
                                                     SK241 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SK249 78
                                                    CONTINUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SK244 79
AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SK249 00
                                                00 44 [ = 1. 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SRZ44 BI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SHZ49 82
SHZ49 83
                                                NUCCUR(I) = 0
                                               CUNTINUE
        C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               58249 84
                                                                                                                                                                                                                                                                                                                                                                                                      5R249 85
                                             .. DU 66 .1 = 1,320 ....
                                                       IOCCUR(I) # 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SK249 86
                                                       CONTINUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SR249 87
         66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SH249 85
        ¢
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SHZ49 84
        C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SR249 90
                                                 ALST=0,200-per 24 describing as a secondary of a secondary of the secondar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SK249 91
                                                  C=1.00
                                                 CAPG= 32.2185200
DELIN=-2000.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SK447 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SK449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   44
                                                 DELIN=-2000.0D0
FACTR1=0.002375D0++0.8D0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SK249 95
                                                   G=32.17400
                                                  GAMMA=1.400
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SH247 97
                                                   IMPLUT # 0
                                                  IREF # 1
                                                   ISP=1.000
                                                LP = 1
                                 LPLOT .... 1
                                                 MATLNI=1
                                     MATLINZEL CONTROL OF THE PROPERTY OF THE PROPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SR249106
                                                  MH=28.900
                                MATABLE I Propried above the control of the control
                                                  MXTAB2#1
                                                  MCP ...1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SKZ49110
                                                  NUECUY # 1
                                  TOTAL OF THE A. THE PROPERTY OF THE PROPERTY O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SR249111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SK449112
                                                  NGEUM#1
                                              NPA # 1 1's que ma consequence menor monte en mar s'en el manación que en mar en mar el manación de la secono dela secono de la secono dela secono de la secono dela secono de la secono dela secono
                                                  NPHINT#1
                                            PI = 3.14159265358979300 SK249412
                                                   X=53.500
                                                  RE=2.0902290607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SKC47110
                                                    $16-3.500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SHLATLLY
                                                    TABIX1(1)=1.000
```

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TABIA2(1)=1.000
                                                                        SH249120
     TABIL(1)#1.000 ---
                                                                        5R447141
      TAH12111-1.000
      TECON-2.000
                                                                        58449163
      TINIT = 500.000
                                                                        SH449144
      TST=100.000
      TWS1 #580.000
      TH1-1200.000-
                                                                        SR249127
      TW2=1200.000
      XLUM#4.000
                                                                        SKZ41129
      XUP=6.000
      X11UH=0.200
      X1UP=0.4U0
      /HAR=-10000.0D0
      ZETA=0.900
      ZPK1=10000.000
      ZTUKN = -1.00
¢
     DU 22 I = 1, 160
NPV(I) = 1
22
     CONTINUE
C
      DO 30 1 = 1, 50
      NCOMOV(1) = 133
33
      CUNTINUE
¢
       00 99 1 # 1, 90
       IOPEII = 1
99
       CONTINUE
¢
      00 4 J=1,16
    - CHIGH(J)=1.00-4
    4 COUNN(J)=1.00-5
C
       00 77 1 = 3, 27, 3
      AA(1) = 1.00
77
     CONTINUE
Ç
      CALL ZPRS (A. B)
¢
      RETURN
                                                                       SH249100
Ç
                                                                       SH249101
                                                                       SR249102
```

I-715

```
CSTUFF
                                                                      STUFF
     SUBROUTINE STUFF
       IMPLICIT REAL +8 (A-H,O-Z)
     COMMON/BLKO/ H(40.40).X(40),G(40).S(40).XP(40).GP(40).T(40).GB(40)STUFF
     1.GS. GSP. GTP.GSS. GTT. GSB.F.FP.F8.FO.E. P.TJ.RS.SL. Z.J.A.EL.
                                                                      STUFF
     2DELTA.FAC.C(40.10)
     COMMON/BLKI/M,N.L.LS,MI.MS.NS.IT.K.NC
                                                                      STUFF
                                                                      STUFF
                                                                             B
                                                                      STUFF
000
          SUBROUTINE STUFF, PART OF THE DAVIDON MINIMIZATION METHOD.
                                                                      STUFF
                                                                           10
         TESTS HOW WELL THE FUNCTION HAS BEEN MINIMIZED AND HUW WELL
                                                                      STUFF
         THE MATRIX H APPROXIMATES THE INVERSE OF THE MATRIX OF SELUND
00000
                                                                      STUFF 13
       - PARTIAL OCRIVATIVES AT THE MINIMUM.
                                                                      STUFF 14
                                                                      STUFF
                                                                           15
                                                                      STUFF 16
      STUFF
                                                                      STUFF 17
  600 K=K-1
  601 IF (K)617,602.602
                                                                      STUFF 18
  602 MS=MS&1 ...
  620 WHITE 16, 11MS, GS
                                                                      STUFF
                                                                            20
                                                                      STUFF
  603 DO 604 1=1.N
                                                                      STUFF
¢
                                                                           46
¢
                                                                      STUFF
  604 TILL RANDOM (DUMMY)-0.5
                                                                      STUFF
                                                                      STUFF 20
  605 CALL MATMP (N.N.H.T.S)
                                                                      STUFF 27
  606 M=1
  607 CALL MATMP (M.N.S.T.TP1)
                                                                      STUFF 28
  606 TP1 = DSQRT(TP1)
                                                                      STUFF
                                                                      STUFF 30
  609 EL#P/TP1
                                                                      STUFF
  610 00 611 1=1.N
                                                                      STUFF
                                                                            34
  611 X(11)=X(1)&EL=$(1)
                                                                      STUFF
  612 MA#2
                                                                      STUFF 34
  614 L#1
                                                                      STUFF
  616 RETURN
                                                                            33
                                                                      STUFF
  617 L#2
  618 MS=0
                                                                      STUFF 38
  619 GU TO 616
                                                                      STUFF 39
    1 FIRMAT (13HORANDOM STEP 14,5H GS=1PE14.5)
                                                                      STUFF 40
      END
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T-716

TABL	IMPLACIA REAL+8 (A-MaO=4)	- 1444
	APPENDENCE OF THE STANDARD OF A STANDARD OF	TAPLE
	FUNCTION TABLECKEXTABE TRABETMAKELA DIMENSION ATABLEZAETABLEZA	TAPLE 3
	DIMENSION ANADICAGENADICA	TABLE 4
,	CHACTION TABLE DEBENING A ONE DIMENSIONAL TABLE LOOK	TABLE 5
	FUNCTION TABLE PERFORMS A ONE DIMENSIONAL TABLE LOOK UP.	TABLE 7
	and the state of t	TAULE 6
	IF (KMAX . EQ. 1 NUD TO 6	TABLE 9
	IFIL.GT.QJGQ TO 2	TAPLE 10
	1 GU=1	TAOLE IL
	1F(XTAU(11,GT.XTAU(2)))GU=2	TABLE 12
	The second secon	TAULE 13
	DU 1 K=2 KMAX	TABLE 14
	GO TO(3,4),160	TABLE 15
3	IFIX.GT.XTABIKIIGO TO 1	TAULE TO
	GD TO 5	TAULE 17
4	IF(X.LT.XTAB(K))GG TO 1	TAULE 18
	L=K	TAGLE 19
	GO TO 2	TAULE 40
1	CONTINUE	TAOLE ZI
		TAULE 22
	L=KMAX	TAULE 23
2	ANS#YTABIL-116(X-XTABIL-111+(YTABIL+-YTABIL-111)	TAULE 44
	((ATAB(L)-XTAB(L-1))	TAOLE 42
	TABLE=ANS	TABLE 20
	RETURN	TABLE 27
		TADLE 20
ó	TABLE #YTAB(1)	TAULE 27
	RETURN	TAULE 30
	END	TAULE 31

## INOT REPRODUCIBLE

i-a iba	TMPL 1C TT REALIST IN-HIDEZTON CONTRACTOR CO	TEQUA	2
	SURROUTINE SCOUATINERIVE	TEQUA	3
		TEQUA	4
1000	RFALMA ISP,M	TEQUA	5
		TEQUA	6
	DIMENSION DERIVILEI, CMATIS, 31, TTMATISI, TBMATISI, FBMATISI, FTFAT(3)	TERUA	7
NAME OF TAXABLE	THENSTON TO CURTA ODDI , NOCCURT 303	TFQUA	8
:		TEQUA	9
in- wilding	TO FOUTVALENCE	TEQUA	10
	1(OCCURIOO1), ARTE 1, (OCCURIO16), CD 1, (OCCURIO19), CAPG 1,	TEQUA	11
index over liferal	"2(MCCUR(025):6AMF" ),(MCCUR(037),M ),(CCCUR(051),QD ).	. 10	12
	3(0(CUR1063), RF ), (0(CUR1092), V ), (0(CUR1091), Z)		13
elitinosistika e	FOUTVALENCE	TECUS	14
	1(00CUR(003), ALPRIMI, (00CLR(044), PH) 1, (00CUR(045), PS) 1,	TEQUA	12
rip(1 <del>90</del> 444)4 4	TICOCCUR (971), THEALPS: (OCCUR (200), PSTALPS: (OCCUR (203), CN ).	TEQUA	16
	RECOCCUPIED THINE INICCURIZATION ),	TEQUA	17
	""A(CCUP(3565),TTMAT(1)),(CCCUP(3643);TBMAT(1))	TEQUA	18
•		TEQUA	
<b></b>	COMMON TOCCIDE, NO COURTER OF STREET STREET CONTROL CO	TFQUA	20
•		TEQUA	21
Per (errorin	The state of the s	TEQUA	22
•		TEQUA	
Man to Limite	SUPROUTINE TERUAT CALCULATES THE DERIVATIVES OF THE PARTICLE	TEQUA	24
•	TRAJECTORY AND THRUSTING PARAMETERS.	TEQUA	25
Biter- Halle	THE FOLLOWING DERIVATIVES ARE CALCULATED IN THIS SUBSCITING	-TEQUA	26
•	DESTAILISM COL	TEQUA	27
e e li se e		TEQUA	56
	DER 1V(3)=0 (TIME) /DIALTITUDE)	TEOLA	
		TEQUA	30
•	DEP IV(1/) = VP DOT	TEQUA	31
e e		TFOUA	32
	DERIV(16) *NTH DOT	TEQUA	33
Menter water a	THE PROPERTY OF THE PROPERTY O	TFQUA	24
7		TEOLA	35
) 1		TEQUA	36
	CTHEL=COST THEALPS	TEQUA	37
p <del>illostostid</del>		TEQUA	38
	CPSI#CRS(PSI)	TEQUA	39
piddere inclid	MINISTER SINCESTO . Lassaciane e minime minime minime mi come mi prime in prime per la completa de minime prime de minime de la completa de minime	TFQLA	
	CPHI#COS (PHI)	TEQUA	100
	TO THE SINIPHIA A SECTION CONTRACTOR CONTRAC	TEQUA	. 84-
_		TFQUA	
-	COMPONENTS OF THE CONVERSION MATRIX WHICH TRANSFORMS FACH A	TEQUA	44
Ç.	ROOM DETENTED TO A TRAJECTORY ORIGINED COORDINATE SYSTEM.	TEQUA	45
-1 desirable to 13 to			
	CMATER, I DECTHEL +SPEI	TEGLA	
1987 A	" CMATES, 11 = + STHEL TO COME SOLD TO THE COME OF THE COLUMN THE		
	CMATEL, 21=CPSI+STHFL+SPHI-SPSI+CPHI	TEQUA	
	CH4F12,21=5P51+9THFL+5PH19CP51+CPH1	-TFOUA	
	CMATER 3.21=CTHFIL +SPHI	TEQUA	
***********	CMATIL, 3 1=CPSI+STHFL+CPHISSPSI+SPHI		to my
	CMATA2,31=SPSI+STHFL+CPHI-CPSI+SPHI	TEQUA	
	THE TIES AS A MICHAEL ACPAIS COURT OF THE PROPERTY OF THE PROP	TEQUA	
Ç.		TEQUA	
Alternation of the last of the	PESCLUTING THE THEUST MECTER INTO TRAJECTORY COORDINATES.	TERUA	10
	CALL MATHPYSTTMAT, CHAT, TRHATS	TEQUA	57
in # Mi	THOUTHWACHATIL TI	TECLA	明明
	YAPOTE WECHATIL 21	TEQUA	59

CONCINE ALCHIEL I. Land	TEQUA	60
	-	
NORMAL FORCE CAUCULATION.		C1
FN=CN+OD*ARFF		
AXIAL FORCE TOFFFICIENT, The second commence of the second commence	TEQUA	63
CX=(-CCCCN+SIN(ALPRIM))/COS(ALPRIM)	TEQUA	64
and the second s	TEQUA	
CALCULATION OF BODY FORCES.	TEQUA	66
THE HARDEST PROPERTY AND ADDRESS OF THE PARTY	TEQUA	67
	TEQUA	'68 ***
CANAL SOL CANDID LANSENDINA NEST AND CONTRACTOR OF THE SECOND OF THE SEC	TECLA	69
FERROT, LT. 1.00-10160 To 1	TEQUA	
FAMAT(2) =- FN#YACOT/ROOT	TEQUA	100
TRMAT(3) #-TN*78COT/ROOT	TERUA	
00 tu s	TEQUA	
1"FBM4T(2)#0,000 miles and the second of the	TEQUA	
FRMAT(3)=0,000	TENLA	
RESOLVING THE BODY FORCES INTO TRAJECTORY COORD INATE SYSTEM.	TENUN	
2 CALL MATMPY (TTMAT, CMAT, FRMAT)		
The second secon		77
C CALCULATION OF DERIVATINES.	TERUA	78
The state of the s	TEQUA	79
TEM2=CAPGATEMATEM	TEQUA	PO ·
	TEQUA	61
STNG#SIN(G:3MF)	TEQUA	P2
TUSG=FUS(GAME)	TEQUA	
TO THE LIBRARY TO ARREST AND TEMPORATE TO THE TOTAL OF THE PROPERTY OF THE PRO	TFQUA	-
THE IVIZIACISSET VAVATEM/REATEM2)/VA-(FTMAT(3)ETTMAT(3))//MAGA	TEQLA	- ,
TER IV(3) = V*91NG	TEQUA-	
"t?1V(^)#C!\S(PSTALP1#V#COSC##E#		
TOTAL PER THE 16 LEST SHEET BEAL MANUAL MANU	TEQUA	
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The same of the sa	TEQUA	
DECIVIAL TO CONTROL THE STATE OF THE STATE O	TEQUA	
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FNO	TEQUA	52
The second secon	TFQUA	93
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TIMFOS	TIMER 1
THPLICIT REALITACHTO-ZI	TIMER 2
SURROUTINE TIMEPSIN, TABLE)	TIMER 3
TIMENSTON SABLETET	TIMER 4
	TIMER 5
	TIMER 6
SUBROUTINE TIMERS IS A DUMMY SUBROUTINE.	TIMER 7
Annual Control of the Indian Control of the Control	TIMER B
	TIMER 9
RETURN	TIMER 10
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PFAL#A LAMOA,LA,MODT,MC,WT,MN	TOMAL 2 TOMAL 3 TOMAL 4 TOMAL 5 TOMAL 6 TOMAL 7
SUBROUTINE TOMALO  REAL** LAMDA, LA, MODT, MC, MT, MN  CIMENSION OCCUR(4000), NOCCUR(30), MODT(4, M), XLA(8)	TOMAL 3 TOMAL 4 TOMAL 5 TOMAL 6
PEAL*R LAMDA, LA, MODT, MC, MT, MN CIMENSION OCCURISON, MOCCURISON, MODTIA, MI, XLA(8)	TOMAL 4- TOMAL 5 TOMAL 6-
PEAL*A LAMDA, LA, MODT, MC, MT, MN  OTMENSION OCCUR (4000), NOCCUR (30), MODT (4, 8), XLA(8)	TOMAL 5
CIMENSIAN ACCURIADON, NOCCURISON, MADTIA, PLAIS	TOMAL6-
PIMENSION OFFUR (ADDO).NOCCUR(30),MODT(4,8),XLA(8)	
	TUMAL 7
•	TOMAL
FOULVAIENCE	TOMAL 9
	TOMAL 10
	TOMAL 11
2(OCCUR(042),PI 1,(OCCUR(052),RN 101),(OCCUR(064),SINT 1), 3(OCCUP(070),TANT ),(OCCUR(08),WDCT ),(OCCUR(091),7	TOMAL 12
3(OCCUP(070), TANT ), (OCCUR(096), WOCT ), (OCCUR(091), Z ),	TOMAL 13
A(DCCUR(092),/TR),(DCCUR(0915),XLA(1)),(CCCUR(2708),MDCT(1,1)	
COMMON OCCUR, NOCCUP TO THE TOTAL TO	TOMAL 15
THE WALL BELLEVING FOR	TOMAL "16
	TOMAL 17
	TOMAL 18
To the contraction of the contract of the cont	TOMAL 19
	""TOMAL 20
SUBROUTINE TOMALO INTEGRATES THE MASS LOSS RATE ALONG THE	TOMAL 21
BODY TO BETTEN THE PATE OF CHANGE IN WEIGHT DUE TO ABLATION.	" TOMAL 22 .
	TOMAL 23
INTEGRATION ALONG SHAPP CONE FOR LAMINAR FLOW.	TOMAL 24
IF(LAMPA.GT.1.0C-3)GO TO 2	TOMAL 25
""""""""""""""""""""""""""""""""""""""	TOMAL 26
	TOMAL 27
INTEGRATION ALONG SHARP CONE FOR TURBULENT FLOW.	TCMAL 28
IF(7.LT.ZTP)MT=3.0/00*(12.000)**0.200)*TANT*MDOT(3.8)*LA**2/COS	T TOMAL 29
GR TO 3	TOMAL 30
•	TOMAL 31
TTT 2" TEM=PINLA CONTACTO // COSTNOTACEST)	TOMAL 22
TEM1=9N#(1.0.J-SINY)/LA	TOMAL 23
TEM2=0.F00*SINT	TOMAL 34
TEM3=(.74600~SINT)/.23400	TOMAL 35
	TOMAL 36 -
BLUNT COMP LAMINAR MASS LCSS INTEGRATION.	TOMAL 37
IF(Z.LT.7TR)GO TO 6	TOMAL 3R -
C INTEGRATION AROUND THE NOSECAP.	TOMAL 39
MN=P1*PN+(1,00-SINT)*(MDCT(1-1)EMDOT(2-1))*RN	TOMAL AD
INTEGRATION ALONG CONICAL FRUSTUM USING TRAPEZOIDAL BULE.	TOMAL 41
	TOMAL 42-
MC(1)=TFM*(XLA(161)-XLA(1))*(TFM16TFM2*(XLA(161)6XLA(1)))	TCMAL 43
TOWN METTS-METTS-METHONISM AND TAXABLE FACTS	TOM#L 44 -
on to 7	
	TOMAL 45
	TOMAL 46
THE	TOMAL 47
INTEGRATION AROUND THE MOSECAP.	TOMAL 48
MN=0.735100*RN**RM*(MBOT(1;1)EMDOT(4;1)E(MDCT(4,1)EMDCT(3;1))	TOMAL 49
[ATEM3]	
	TOMAL FI
*** INTEGRATION AUCNO "CONTCAL" PRUSTUM USING TRAPEZOIDAL "RULE." -	TUMAL 52
	TOMAL 53
MC(1)=TFM#(XLA(181)=KLA(1))mtTEM1CTFM2#(KLA(181)6KLA(1)))	
C. w. et l'entre d'i bracture à l'annieur l'annieur de l'annieur d'annieur de l'annieur de l'ann	TOMAL 5
) The state of the	TOMAL 156 TO
· · · · · · · · · · · · · · · · · · ·	TOMAL 57
SHAMATION OF CONTRIBUTIONS FROM NOSECAP AND CONICAL FRUSTUM	M. TOMAL 58

•	E	
CH - MARCO MARCO CO. See		
R MT=MTGMC FFA		towat ea
RETURN	2	TOMAL 62 TOMAL 63 TOMAL 64
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CV DOEN
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               IMPLICIT REALMS (A-H,U-Z)
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           SUBPOUT INE VIXEN
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                                                                                                                                        VIXEN
           REAL #4
                                   TIXM, TIXT, TIX7, 11, 12, 13, 14,
                                                                                                                                        VIXEN
         115.76.17.78.19.110.111.112.113.114.115.116.117.118
                                                                                                                            T 21. T 2 2V TX FN
             PHAL # 4 T27, T24, T25, T26, 127, T28
                                                                                                                                        VIXEN
           REAL #H LAMBA, LA, MINE, MODIT, LAMSTO
                                                                                                                                        VIX PA
           CORBON /COCCUR/ PCCUP(11770)
                                                                                                                                        VIXEN
           CUMMIUN /CICCUR/ 1000 UR11201
                                                                                                                                        VIXEN 15
           COMMON /IXCOM/ XCON(2001, 100M(200)
                                                                                                                                        A IX EN
                                                                                                                                                    11
           CUPMON OCCUR. NOCCUR
                                                                                                                                        VIXEN
                                                                                                                                        V IX EN
           CIMENSION A(F14), COFINE(2,2,2), QOOT(4,8), MOCT(4,8), PEPSU(8),
                                                                                                                                        VIX FM
                               DECUR ( 4000) , NUCC UR (30) , CD ) WY(16) , TTMAT (3) , TITLE(2);
                                                                                                                                        VIVEN
                                                                                                                                                    15
                                ALMAX (2001) ALMIN (200) . TAPAX (200) . TAMIN (200) .
                                                                                                                                        AIKEN
                                  ZMAX (200) - ZHIN (200) + FMAY (200) + FMIN (200)
                                                                                                                                        VIX FAL
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           EIMENSION DVALUE(16).DERIV(16).LPAMO(16).CNRNO(16).CHIGH(16)
                                                                                                                                        VIXEN
                                                                                                                                                   10
           CINENSTEN GINTERLAGEASTERS
                                                                                                                                        VIXON
           CIMENSION MPLOTERS
                                                                                                                                        VIXEN
           CIMERS ION.
                               HTZ (75) . HTM INF (75) . WIRINF (75) . WIPTOT (75) . TRAJE (75).
                                                                                                                                        VIXEM
                                TRAJ7 ( 75) . TRAJV( 75) . TRAJK(75) . TRAJRN(75) . TRAJR
                                                                                                                                        VIXEN
                                ALPTABL 751
                                                                                                                                        VIXEN
           DIMENSION
                                               TI XM(10), TI X T(10), TI XZ (10), T1 (10), T2 (10),
                                                                                                                                        VIXEN
         173(19). T4(19). T5(10), T6(10), T7(10), T9(10), T9(10), T10(10), T41(10).
                                                                                                                                       VIXEN
         1712( 101, 713(10), 714(1(1, 715(17), 716 (10), 717 (10), 719(10), 719(10),
                                                                                                                                        VIXEN
                                                                                                                                                   26
          112. ( 10), 121( D.T. 122(1C),
                                                                                                                                       VIX EN
          ? IPLOT(160), TPLUT(16C),PLMINE(16J),COPLOT(160),COEPLT(16U),
                                                                                                                                        VIXEN 28
         4COMPLT(16)), COMPLT(160), WIOMPL(160), ACTAPL(160), VALCE (160).
                                                                                                                                       VIXEN
                                                                                                                                                   170
         AVERPLITIES. OPEUTITEC), PSPECTITADI ATSRTPLITECT, QUITPLITECT.
                                                                                                                                        VIXEN
         63D41PL(1691,PE1PLT(16C),PE7PLT(163),PE8PLT(163),CO7PLT(160),
                                                                                                                                        V [X FA
                                                                                                                                                    11
         7 OPERATO 1601, ALPENTO 1601, OCPLOT (160)
                                                                                                                                        VIXEN
            DIMENSION WRIP(16C), WRZP(16C), WRZP(16C)
                                                                                                                                        VIXEN
            DIMENSION SCIPCION, MIZPINOSIAMESPINOSI
                                                                                                                                        VIK FN
           CIMENSIUN T22(10), T24(1C), 125(10), 126(10), T27(10), T28(16)
                                                                                                                                       VIX EN
            DIMENSION TOPESCI
                                                                                                                                        V IX EN
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           FOULVAL ENCE
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         HUCCURIC HILLAPEF
                                            1. LOCGUE LOCAL ALPHA LILCCOURTED 31 ALPRIMI.
                                                                                                                                       VIKEN
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                                             1. INCC URICIAL.CD
         PIGCOURT CIPT, CAPE
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                                                                                                                                       VIXEN
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           EQUITAL ENGE
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         HOCCURET 291. HSR TO "1, LEGG LE LC32) , LANDA 1 . LCCCUR (033) . LA
                                                                                                                                       VIXEN 43
         21 UCCUREQ 351, MINE
                                            1. (CCC LR (042) .P1
                                                                                  ) . ( CCCUR (043) . P
                                                                                                                                       V IX FN
         31 CCCURTC44 I.PHI
                                            "I'T CC LR ( C45) .PSI
                                                                                  1 . ( CCCUR (047) . PS
         410CCUR1 0501.Q
                                             1.10CC UP ( C511 .00
                                                                                  1. (CCCURIUS2).RN
                                                                                                                                       VIX FN
           EDUTVAL FRICE
                                                                                                                                       VIXEN
                                                                                                                                                   47
         1(UCCURING2), REVL
                                           1. (OCC LR (C65) .SMR
                                                                                                                                        V TX FN
         21 OCCURT 945). THE TADI. LOCCUP (071) . THE ALP) . (CCCURTO75) . T
                                                                                                                                       VIXEN
         PROCEURICAS), THETA 1. LOCCURICACI .TIMER 1. (CCCURIO91).SMF
                                                                                                                                        V IX EN
                                                                                                                                                   50
          FIGUREAU FACE
                                                                                                                                       VIXEN
         1000CUR (0821,V
                                             1. (OCCURICATION
                                                                                                                                        V IX EM
         SCCCCURT 9991, KBAR
                                            1, (OCCURIONI), 2
                                                                                  I . I CCCURTO921 .ZT K
                                                                                                                                       VIXEN
         3(HCCURI (95) GRATE 1. (DCC LR (C96) .ALPENVI . (CCCUR (997) .DELM
                                                                                                                                       V IX I'M
         ALDCCURT CART, COPT
                                            1, (OCC UR ( 099) , COB
                                                                                  1.10000311001.001
                                                                                                                                       VIX EM
                                                                                                                                                   55
         SCHOOLER IST 1, COP O
                                            1, LOCGUR (1021, TU
                                                                                  ).(CCCUR(LOS).GAPFO
                                                                                                                                       V IX EN
                                                                                                                                                  56
         ctericum ( 1965, va
                                            1, (OCC UP (107) , XRY
                                                                                  PACCOCURCIOS) - AS
                                                                                                                                       VIXEN
                                                                                                                                                   57
          LUTVALENCE
                                                                                                                                       VIXEN
         MORE CURTICOLORS
                                            Fatecotk(1101,00
                                                                                  L. (CCCHRILLI).SMRU
                                                                                                                                       V 1X FH 59
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2100CURT 1121,PH10
310CCURT 1181,ZPP 1
                            1, (CCC UR (113) . THE ALO) . (CCC UR (114) . PS 1. I, (CCC UR (119) . ZPR 2 ) . (CCC UR (120) . Z R A A
                                                                                       VIXEN 61
     400CCUR ( 1211,75T
                            ), (OCC LR (122) ,ALST _), (CCCUR(123),TST
                                                                                       VIXEN 62
     SECCOURTIZED, XBARI ),
                                                                                       VIXEN 63
                                                                                       VIX FN 64
     GIUCCUR(127),DATE 1,(DCCLR(128),CASE ),(CCCUR(129),EMC
     7(OCCUR(130),ALWIG2), (OCCUR(131),ALBARP), (CCCUR(133),W1
                                                                                       VIXEN 65
     SECCURITOTION I
                                                                                       VIXEN AG
                                                                                       VIXEN 67
      FOUTVALENCE
     1(OCCUR(199), YR 1, (OCCUR(200), PSTALP), (CCCUR(201), TH 2(OCCUR(202), CM 1, (OCCUR(203), CN ), (CCCUR(226), OFL
                                                                                       V 1X FN 69
                                                                                       VIXEN 69
                                                    ),(CCCUR(226),DELW2 )
                                                                                       VIXEN 70
     1(OCCUR(2271.DELW3 ).(OCCUR(228).WTOTAL).(CCCUR(230).8ETAP ).
                                                                                       VIX EN
                                                                                              71
     2(DCCUM( 2311+BCTA 1 + (DCCLR (232) + V)GDOT) + (CCCUR(233) + DOW 1 ) +
                                                                                       VIYEN
                                                                                              7.2
     310CCUR (234), DELCOP), (OCCUR (235), DEC DE P), (CCCUR (236), DECFT C).
                                                                                       V IXEN
     4(ACCUR(237), XUP ___), (ACC LP (244) , REYINE),
                                                                                       VIXEN
                                                                                       V 1X EN
     5(0CCUR(245),PTOTAL), (DCCUR(247), UPB ND 7), (CCCUR(248), DNBNDZ)
      FOUTVAL ENCE
                                                                                       VIX FN
                            ACTIFF COCCURCTO44 F. ALMAXCITE.
     10000086038114
                                                                                       VIX FN
     Z(UCCUR(1244), ALMIN(1)), (UCCUR(1444), TA 4AX(1)).
                                                                                       VIX FN
                                                      ZMAX(11),
     ?(OCCUR(1644), TAMIN(1)).(OCCUR(1344).
                                                                                       VIXEN
      4(000UR(2:44), ZMIN(1)),(DCCUR(2244), FMAX(1)),
                                                                                       V IX FN
                                                                                              8n
     SICCCUR(2444). FMIN(1))
                                                                                       VIXEN 82
       EQUIVAL ENCE
                                 ), (OCCUP(1119), WTMLAF(1)),
      110CCUR( 1044),WTZ(1)
                                                                                       VIXEN
      2(OCCUR ( 1194) . WTR INF ( 11) . (OCCUR (1269) . WTPT CT (1) ) .
                                                                                       VIXEN
      3(OCCUR(1344), TRAJT(1) ), (OCCUP(1419), TRAJ7(1) ),
                                                                                       VIXEN 85
      4(LCCUP(1494),TRAJV(1) ),[DCCUP(1569),TRAJK(1) ),
                                                                                       V IX FN
                                                                                              36
      5(OCCURE 1644), TRAJEN(11), (OCCUR(1719), TRJALP(1))
                                                                                       VIXEN BB
      EQUITAL ENCE
                                                                                       V IX EN
      110CCUP1 26761, Q901(1, 1)), (OCCUP(2709), MDOT(1, 1)),
                                                                                              89
      210 CCUR (2793) . COF INF (1,1,1) . (UC CUR (2301) . PEPSH (1)) .
                                                                                       VIXEN 96
      TITIBATH, (FESE LAUDDINE
                                                                                        VIXEN 91
                                                                                        VIXEN 92
       COULVALINGE
      MORGURE 2533), CHICHELD), (DCCUR (3549), CDUNA(1)),
                                                                                        VIXEN 93
      2(OCCUR(3565), TTMAT(1)),(OCCUP(3646),ALPTAB(1))
                                                                                        VIXEN 94
                                                                                        VIXEN 95
      EQUIVAL HICE
                                                                                        VIXEN 96
      I(NCCCURTALI, JUHILD I, (NOCCUR (C3), MOPT ),
      21NOCCURE U61, MAXVALI. (MOCCUP 107) . LOPT | 1. (MOCCUR 1101, MHEAT ).
                                                                                        VIXEN 97
      XINDCCUPITED, IKHAX ), INCCOUR (12) . IKHIN ).
                                                                                        VIXEN 98
      2011 COURT 141, MPR INTI . UNDCCUR (24) +MPL GT (14) + (MOCCUR (29) - 1TAPE) .
                                                                                        V1X FN 99
      ACHOCOURE BUT, INALPHI
EQUIVAL FACE (NOCCURE CCCCP), TATMOS
                                                                                        VIX FH 100
                                                                                        V IX EN 101
       FOUTVAL FREELOCEUR (4CCC1+LP)
                                                                                        V IV FN 102
       EDULVAL ENGE (IDCCLR(GCCCI), IDP
                                                                                        VIX EN 103
        EQUIVALENCE (INCCURINGS14) , IOBL
       FOUTVALENCE (INCCUPIGC302), LPLCT )
EQUIVALENCE (PGCURICC641), BETAPL)
                                                                                        VIXENIOS
                                                                                        V 1X FN 106
       EQUIVALENCE (PCCURICCCCI). TPLOT )
EQUIVALENCE (PCCURICC481). VCGPLTI
EQUIVALENCE (PCCURICC321). VPLOT )
                                                                                        VIX FN 107
                                                                                        VIX EN 108
                                                                                        VIX FHITOG
                                                                                        VIX EN 110
       EDUTIVALENCE (PCCUPICIZPI). WLIP
       EQUIVALENCE (PCCUP(01441), 6L2P
                                                                                        VIXEN111
                                                                                        V 1X FN 112
                                                                                        VIXEN113
       CUBIVAL ENGE (PCGURICGECT).
                                        WIP
       EDUTVALENCE (PCCUPCOCSET). MRZP
                                                                                        VIXFN114
                                                                                        V1X FN 115
                                                                                        VIXENI16
       SOUTVALENCE (PCCLR (CC161), ZPLOT )
                                                                                        V1XFN117
Č
                                                                                        V IX FN 118
                                                                                        VIXEN 119
```

(								V 1X Ft! 1.20
è		7.77	SUBBOUTI	INE VIXEN PEPE	GRMS THE E	BLLOWING FUNCT	ICNS -	VIXENI21
		<b>C</b> 1		IAL VALUES OF			1049	V 1X FN 122
Ç						V2218K2 VINNET	PRIATE GECMETATO	
C				IAL PROPERTIES				V IX EN 124
C		Α:	SSIGNS TI	HE ACCURACY LI	MITS FOR I	NTEGRATION.		V 1X FN 125
C		Ç.	ALLS IN 1	THE INTEGRATIO	N SLAROUTE	NE. ADMARK. FC	R THUSE UPTIONS	VIX FN 126
Ĉ						LATED, CR SET		V IX FN 127
- 0							WIND TUNNEL UR	VIXEN128
C							THE SUBRUUTINES	
_ €						ARY TO OBTAIN.	CRAG VALUES	VIX EN L30
C				NTEGRATION IS I				V 1X FN 131
Ç		С	AL CULATE:	S THE MAXIMUMS	MINIM ONA	UMS IN ANGLE C	F ATTACK WHEN	V JX FN 132
ι.	*					BEDOM PPTION 1		V 1XFN 133
ř				THE PRINTOUT.				V 1X F11 34
	* .				C OLCTTON	· CHI DOUTT NEC	· / rp - / cultivate of the re-consistence	PP 1
(		Ų,	ALLS IN	THE TAPE AND T	HE PLUTHIN	• 200 KG01 LV52 •		V IX FN 135
C					4.4			V IX FI: 136
Ç								V IX (N 137
C								V [X [N 133
Č			TITLES	FOR THE PLOTTE	NO OPTIONS		X Market A - 1-	V 17 FU 139
_		CATA		1/4H TUPB/				V [X FN 140
••				174H LAM7	19.2 • . G   <b></b>	and the second second section of	en el podre ser co <b>ndition</b> e e rapidos agés com de ser en	1 610 11 190
								V IX FN 141
			TIXT/40	The second secon		E IN SECONDS		V 1X FY 142
		CATA	TIXZ/40	r)	ALTI	TUDE IN FEST	/	V 1X FN 143
		CATA	TIXM/40	4		MINE	, .	V 1X FN 144
		CATA	T1/40H	****	24.0 -1	CO TOTAL		V 1X FN 145
		CATA	T2/40H			CDS & CDP	1	V 1X FN 146
	4.6 -0 19   90-		T2/40H		LENT" WE TH		many for the second second section of the second se	V 1X FN 147
		-		COT THE CO	CCRI MI IN		<b>'</b> ,	
		CATA		promise til to the		0.01	m	V IX EN 148
		CATA				AL/W1		A IX EN 340
		CATA	T6/40H		βE	and the same	, , , , , , , , , , , , , , , , , , , ,	V 1X FN 150
		CATA	T7/4CH		VE LOC	TTY(FT/SEC)	/	VIXTM 151
		DATA	T8/4CH			MINE	/	VIX EN 152
	*	CATA	T9/40H	ALTERNATION AND STREET AND ADDRESS.		VOOT/G		V 1X FN 153
			T10/40H		AL T	TTUOF (ET)	7	V 1X FRI 154
	× ×		T11/40H	I MARK HER BY A LINE I ARREST		PPESSUPF (LR/FT	21/	V IX FN 155
			T12/4CH			PS(ATMCS)	2.17	
					part (mail p.)		APP THE BELLEVILLE TO THE TOTAL TOTA	VIXEN 156
			T13/40H			HSRTC		V 1X FN 157
	11.6		T14/4/H			G) (NTU/FT2-SFC	A Company of the Comp	V 1X FN 158
		CATA	T15/40H		QDDTESONE	C1 (BTU/FT2 +SFC	) /	V IX FN 159
		CATA	T16/4CH		DULT (	7) INTU/FT2-SFC	1 /	A LK LH 19U
•	P 81 7 1 78 P	CATA	T17/4CH	Harrie anderson en har deservationer in . Mr. 1. in th. 1.151 - month et al.	TOCO	AT INTU/FT2-SEC	. 1" / " ********************************	V [X FN 161
		CATA	T18/4CH		PE	PSB (TANG. PT)	/	V 1X EN 162
4	* M		T19/40H		**** * ****	PEPSU (7)	all resolves his pass or temperature to these [1]	V IX TN 163
			T20/4CH			PF 2 \$9 (3)	<i>'</i> ,	VIX EN 164
				ns (a de las edit on his his parameter of paid pattern of the	"XI OMA OO			
			T21/40H			IME UNVIDEGREE	.917	VIXEN 165
			T22/4CH		And a contract of	COUR (NPLCTS)		V IX EN 166
			T 23/4CH		WAKE LI		/	V IX EN 167
			T 24/40H		WAKE L2		/	VIX FN 16A
		CATA	T25/46H		MAKE L3		7	V 1X 9H 169
			T26/4CH		WAKE RI		1	VIX CM 17C
*	- H-4		T27/4CH		WAKE RZ	I I to a 1 NR a	erine e a dila ri e provincia popili socionale descrip	VIXENITI"
			T28/4CH		MAKE R3		,	V 1K FM 172
-	*** 1	~ A   A	CESTAL	MF 34 - 4044444 - 19 - 19 - 19 - 19 - 19 - 19 - 19	ness Page	K to be		miner.
C								VIXEN 173
c	11 1400		شنمقا مسبها بمرابر	in the filters was as a great connecting to the filter	production of	KINDIAN KILA DE A	e l'en e mont etn des o le me desegne.	V 1X EN 174
C				INTTIAL VALUE	3			V 1X FN 175
	- * *	3⊀ ≠0	THE R P LANGE OF RE MINES IN	No. 1 of Marie William and Marie Annual Community				V IX PM 176
	1	V ≠ V						VIK EN 177
			#GAMFU "			•		V 1X FN 178
		11116	#Ti)	***	-			V 1X FN 179
							•	



## INOT REPRODUCIBLE

1		VIX EN 18G
		VIXFNIRI
**	4 1 1 4 ps. is incompression and indicated the state (special particle (special particle) and indicated (special particle) and	VIX FN 182.
	The state of the s	VIXENIER
	The state of the s	V IX FN 184
		V IX FN 185
•	The state of the s	A 14 EN 189
- 1	PF[#PHI()	V TX FY 187
	YK = 0 +1,00	A IX certain
	P\$1ALP*0.000	A IX En 140
	ZUST #Z	V IX FN 190
	CVALUE(1)=V	A 1X E1.141
	CVALUE(2)*GAMF	V IX Ft: 192
	CVALUE(3)*TIME	A IX EN 103
	CYALUF(4)*XR	V IX FM 104
	EVALUET # ) *PST	V IX TN 195
	CVALUE(S)*THEALP	V IX FN 196
	CYALUE(10)*PHI	V IX FN 197
	CVALUE(11)=0 , , , , , , , , , , , , , , , , , , ,	V 1X FN 198
	CVALUE( 12) = SMR	A 1X EM 100
material I for at	CVALUE (12) P	V 1X Ett 2000
	CVALUE 141 =YR	V 1X EN 20 1
	EVALUE( 161=PSIAL P	V 1X FN 202
	ettaenapp	A IX EN SUS
	eetap=0.00	V 1X FN 204
	CEL OFT = 0 . O O	V 1X EN 225
	T=0,00	VIX FN 2016
e merelatika	SMF#C.COO	V [X FM 207
	ALPR 1/4 * C - 200	VIX.EM 208
411	ALPHA=0.40C	V 1X FN 209
	ALPHIV=0.700	VIX FN 210
	IALP = 1	VIX EN 211
	IKNAX+G	VIXEM 212
	IKA1N#U	VIXEN213
	PRENTZ *C.DC	V TX FN 214
	25TO =: .00	VIXENZIS
	CELPR 1*ZPR 1	¥ 1X FM 216
	FREU DELPRI	V 1 X FN 217
	CEL #-2PR1/1.CDO	VIX CH 218
	LPERTS.	VIXEN 210
	NNTAPE*C	VIX EN 220
	To part the part part part part part part part part	V 1X FH 271
	SELECTION OF DELTA OF INTEGRATION	V 1X FN 222
	IFIDABSIDELINJ.LT.DASSIDELIJDEL -DELIN	VIXEN 223
N. Opt.		V 1X FK 274
	SUBROUTINE CHNTOL ASSIGNS THE APPROPRIATE GECPETALC PARA-	VIXEM225
	METERS AND MATERIAL PROPERTIES AT ENTRY AND WHEN CONFIGURATION	V IX FN 226
	CHANGES AT ALTITUDE ZTURN.	V 1KEN 227
	CC++1 GC+1	V IX FN 228
6L	CALL CHITAL (OVAL UF, ZTURNX, LCHNGE)	V 1X FN 229
		V 1X FM 230
1111	1 -1 1F(U J-PR.D.Me . I - 17 160 TO 30	V 1X FM 231
	LTM6	V 1X EN 232
	WP IT FI C. 1CC5)	V 1X FN 233
	de to tod	
		A TW LINE DA
	FREE FEINE ACT AZ TERRITORIST FOR INC.	
94	FREE FEINE ACT AZ TERRITORIST FOR INC.	
<b>9</b> t-	FREE FEINE ACT AZ TERRITORIST FOR INC.	
9¢	IFI/USF GT.ZTURNX3GO TO 61 LCHU CE-2 WHITFLE, LOFSIZ FUCK ATLING, 20X, *CONFIGURATION IS CHANGING DISCONTIMEDISLY AT 2-1.	

## NOT REPRODUCIBLE

```
CO TO '60
61 CONTINUE
                                                                                     V IX EN 240
                                                                                     V 1X FN 241
                                                                                     V 1X FN 242
            ASSIGNING OF BOUNDS ON THE ABSCLUTE DIFFERENCE PETWEEN THE
                                                                                    V TX EN 243
          EXTRAPOLATED AND INTERPOLATED VALUES IN THE INTEGRATION
                                                                                     VIXEN 244
                                                                                     VIX FN 245
      CO 3 J#1.16
      TEH# ABS (DVALUE (J))
                                                                                     V 1X FN 246
       IFITEM .LE. 1.DOJGO 10 4
                                                                                     V 1X TN 247
      UPBN [[J]=CHIGH(J)*TEM
                                                                                     VIXFN248
      LNOW DE J I = COOWN (J) * TEM
                                                                                    V 1X FN 249
                                                                                    V 1X Et 250
      CO TO T
                                                                                    V [X FN 251
    4 UPPNELJJ=CHIGHLJI
      CHANGED = C DOWNED 1
                                                                                     VIX FN 252
     3 COST INDE
                                                                                    V 1X FN 253
                                                                                     VIX FN: 254
(
       IFILIPETALT.3100 TO 31
                                                                                    V 1X FM 255
       IFILIPET.EQ.4100 TO 41
                                                                                     V IX FN 256
C
                                                                                    V 1X FF: 257
            ASSIGNING TABULAR TRAJECTORY ENPUT TO INTERNAL PREGRAM
                                                                                     VIX FN 258
                                                                                    VIX FY 259
C
          SYMBOLS.
      TIMES = TEAUTINKELI
                                                                                     VIXEN 260
      TIME #T IMER
                                                                                    V 1X FN 261
       TO=TRAJTI11
                                                                                     V 1X Ft 262
                                                                                    V 1X FF 263
       Z=TP AJZ (NK&I)
      V=18 AJV(NK61)
                                                                                     V 1X PM 264
       THEY WE . C. SOCIO TO TOTAL
                                                                                     V 1X F# 265
      SE IT Et c. 15151
                                                                                     VIX EN 266
 1015 FULL ATT THE . TOX . ***** WARNING *** CANNOT ACCEPT A ZERO VELUCITY.
                                                                                    V 1X PN 267
      TOTAL TO NEXT CASE !
                                                                                     VIX EN 268
       RETUPA
                                                                                     V 1X EM 269
 THIS CHAT INUF
                                                                                     V 1X EN 270
       WIPTAL #TRAJW(NK&1)
                                                                                     V IX EN 271
       KM#TFAJRNINK611 /12.CDC
                                                                                     V 14 FN 272
       ALPHA=YHJALPINKELL /57.2557800
                                                                                    V 1X F11273
       AL PR. THE ALPHA
                                                                                     V 1X E 1 274
       INALPH#1
                                                                                     VIX FM275
       CU 74 KK =1.8
                                                                                     V 1X EN 276
       MOGT ( 2.KK) *0.CDO
                                                                                     VIX FN 277
       MODITE TAKE IND. COC.
                                                                                     V 1X 5N 278
       OBITER, KK THE . COL
                                                                                     V 1X FN 270
                                                                                     VIX FN 280
    74 QUOT ( 3, KK ) = 0.00 C
                                                                                   V 14 F4 28 L
       SDUT(1.11=C.COC
       MOUT 14. 11 *C. COC
                                                                                    VIXEN292
       200711.11=0.000
                                                                                     V 1X FN 283
       200114.11=0.000
                                                                                     V 1X FN 284
       CU TO 40
                                                                                     V 1X EN 285
C
                                                                                     V 1X FN 286
            ASSIGNING TABULAR WIND TUNNEL INPUTS TO INTERNAL PROGRAM
¢
                                                                                     VIX FN 2H7
          SYMBULS.
                                                                                     VIXEN 288
    41 CHAT INUE
                                                                                     V 1X FN 289
       L * WT Z CHK G L 1
                                                                                     A 1X to 540
       " I'LE HATH INT INKELL
                                                                                     V 1K EN 291
       IFEM MIF. GF. 5.00 C160 TO 1044
                                                                                     V 1X FY 292
       LA IT EC & 10451
                                                                                     VIX EN 29 B
  1: 45 TO MATE 103, 10%, FREEFENARNING FREEFE CANNOT ACCEPT A MACH NUMBER LESSY 18 FM294
      I THAT S. COING TO MEXT CASE !
                                                                                     V 1X FN 295
       PETUGH.
                                                                                     V 1X FM 206
 1.40 COLUMN
                                                                                     V 1X FN 297
       BTY INCHMINING INFINECT
                                                                                     V 1X FN 298
       "F. T AL BUTP TO TONKE 11
                                                                                     V 1X PM 290
```

```
A 1X 50 30 7
A 1X 50 300
      TIMER=NK
TIME=TIMER
                                                                                       V 1X FM 302
       TC=0,000
                                                                                       VIX FH 3012
       BIALPHE!
                                                                                       V 14 EN 274
       CO 72 KK#1.8
                                                                                       V 1X FN 305
       MOST(2.KK) =C.GDN
                                                                                       V IX FM 206
      MODITE BAKK FROALDO
                                                                                       V 1X FN 30 7
       QDOTIZ.KK F=0.CDC
                                                                                       VIX FHI TOR
   78 graf(3,KK1*0,c00
                                                                                       VIX EN 200
       MODITEL, 11=0.000
                                                                                       A IX esi 310
       MORT(4, 1) = (.COC
                                                                                       VIXENBILL
       2001(1,1)=C.CDC
                                                                                       V1XF1312
       Q00714,13=0.000
             IMPUT ALPHA TO BE USED WITH MIND TUNNEL CONDITIONS.
                                                                                       VINEN313
C
                                                                                       V 1X Ft) 314
       ALPHA=ALPTAB(NK&11/57.29578BC
                                                                                       VIXEN 315
       ALPK IMMALP HA
                                                                                       V 1X FN 316
2000
                                                                                       VIX FN 717
             WHEN TRAJECTORY INPUT OR WIND TUNNEL INPUT TAPLES ARE USED
           THE INTEGRATION SUBROLTING IS BYPASSED AND PRELIMINARY
                                                                                       VIXENBIR
                                                                                       VIKENIZIO
           CALCULATIONS. ACRODYNAMIC HEATING, MASS LCSS. AND DRAG
           CALCULATIONS ARE DONE FOR THE INPUT ALTITUDES CALY.
                                                                                       V 1X FN: 320
                                                                                       V 1X Ett 321
       CONT INUF
                                                                                       V 1X FM 322
       LL #1
                                                                                       VIX 61/323
       CALL PRELIMILLY
                                                                                    . A IN CM 324
        IFINISHE ALT. S. CDC1WE17016.321
    32 FORMATC THU, 25x.57H*** WARNING*** PROGRAM IS ACT VALID FOR MINE LESSY IXEM?25
                                                                                        V IX FM 326
      1 THAN 5.01
                                                                                        V 1X Fti 327
        IF(MOPT .CO .01 GO TO 35
                                                                                        VIXEN 328
        IFCKBAP .GT .XUP IGO TO 35
                                                                                       V 1X FN 3/29
        CALL A EMODY
                                                                                        V TX FELRAN
        IMMMEAT.EO. 31 GO TO 35
                                                                                        VIX FM 231
        CALL MASSLO
                                                                                        VIX FN 232
        CALL TOWALD
                                                                                        VIXEM 333
    39 COUT INUF
                                                                                        V IX FM 334
        CALL DEAGCO
                                                                                        V 1X EN 335
        CU TU 101
                                                                                        V 17 FN 336
C
                                                                                        V 1Y FM 337
           VARIABLES ARE INTEGRATED AND THE TRAJECTORY CALCULATED WHEN
                                                                                        VIXEN 238
                                                                                        V 1X FN 339
           INTEGRATED IN ADMARK ARE AS FOLLOWS, WHERE DVALUE IS THE INTEGRATED VALUE AND DEPIVES THE CORRESPONDING DERIVATIVE
                                                                                        VIX EN 340
                                                                                        V IX PM 341
                                                                                        V 1X FN 342
          WITH ALTITUDE.
              OVALUE (11 *Y
                                                                                        V 1X FN 344
              HVALUE (21 GAMF
                                                                                        V 1X FM 345
              DVALUE (1) -TIPE
                                                                                        V 1X EM 346
              OVALUE ( 41=XR
                                                                                        VIX EN 347
              DVALUE ( 51=W
                                                                                        V 1X EN 348
              DVALUE ( 6) PM
 0000
                                                                                        V 1X EN 349
              DVALUE 11 -RB
                                                                                        V 1K Ft. 350
              DVALUE! 81 =P ST
                                                                                        V 1X PM 351
              DVALUET 91-THEALP
                                                                                        V TX PN 352
              DVALUEL 1L 1 #PHT
                                                                                        VIX FRE 357
              CVALUE (111=0
                                                                                        V IX FN 354
              DVALUE 121 = SMR
                                                                                        V 1X PM 355
              DVALUF(13) *P
                                                                                        V 1X FM 356
              DVALUE (14) *YR
                                                                                        V 1X FN 257
              DVALUE ( 15) *PSIALP
                                                                                        V 1X 501358
              EVALUET 161 = WTH
                                                                                        V 1X FH 250
     11 CONT BUTE
```

CALL ADMARKE16.DEL.DVALLC.DERIV.UPBAO.DVBAD.O.3DO.EREQ .ZST.LP 1ZUSE.1.CDO)	V [X FN 366 V [X FN 361 V [X FN 362
TIME *UVALUE (3)	V IX EN 363
7 = 7 U S F	V 18 PN 364
IffLP-NF-61GO TO 7	V 1X FN 365
48 11 C(+.1C(5)	V 1K PU 366
1005 FORMATCHIC LUX. 34HPROGRAM ERROR. GOING TO NEXT CASE.)	VIXEN267
GG TO 100	VIVEN36P
C	V 1X 11369
E FUR THE LORTER ROTATIONAL TRAJECTORY TESTS ARE DONE TO LET	
C MAXIMUMS AND MINIMUMS IN ALPRIM.	AIK EN 311
7 IF(LOPT.ME.O)GO TO 30	
the contract of the contract o	SAE NO XI V
IFLIKMAX.EQ. 2001GO TO S!	V 3X FN 373
1F(1KMIN.FQ.2CQ)30 TO 51	V IX FN 374
CO TOI 9, 9, 101, IALP	V [X FN 375
A IVINES	V IX FN 376
SUI.A 2#(1.00)	VIX EN TT
5UMA 2=0.00	V IX MU 3TA
ALSTCI#ALPRIM	V IX PN 370
TSTO 1=T INC	OBEMPAT V
ZST() 1=7	V IX Pti 38 I
FSTO 1=SMF	A IX EN SUS
CO 10 29	V IN FRIBAS
5 1ALP=2	VIVENBA4
ALSTU2=ALPRIM	VIKENSOS
TSTO 2=T IMF	V IX FN 786
Z \$10 Z=Z	V 1K PN 387
FSTO 2#SMF	V 1X FN 398
CU TO 20	VIX FN 389
TEMBAX =ALSTO1	V 1X FN 300
IF ( FERM AN .LT.ALSTO2) TEMMAX #ALSTC2	V 1X FN 391
1FITTMMAX.LT.ALPRIMITEMMAX#ALPRIM	V 1X FN 392
TENTINEAL STOL	V 1K FN 393
IFITEMM IN . GT.AL STO23 TEMMIN . AL STC2	V 1X FN 394
IFITEMATH.GT.ALPRIMETEMMIN #ALPRIM	V 1X FN 305
IFI IKMAX, EQ. 0100 TO 21	V 1X FN 396
THIA = ALSTO 16ALSTO2	V 1X FN 397
TCHI =TSTO2-TSTO1	V 1X EN 398
SUMA 2# SUMA 26 C -50 C* TEMA* TEMT	makes a sould not be a few and a sould be a
SUMA PASUMA PA CASO CHIEMAN TEMANTEMIT	A IX EN JOU
Total Control of the	Y IX EN 400
21 CENTINUE	V 1X FN401
ALSTO1=ALSTO2	V 1X FN 402
ALSTUZ=ALPRIM	A IX EMAUS
TSTOIRTSTO2	V IX EMACA
TS10 2=T1ME	V TX F11405
ZSTU 1= ZSTO 2	V IX FM496
25102=2	V IX EM 49 7
+STu 1=FSTO 2	V IX PNAMP
FSTO 2#SMF	A IX Lui vue
LELI MATAX EQ AL STOLIGO TO 11	A LX GM 4 10
IFITEMMIN DO ALSTULIGO NO 12	VIX EN411
CO TO 24	VIXENA12
11 INCLASSING THE PROPERTY OF	VIKEN413
SFC IKMAX.FQ.2CO3WR1TE16.200C1Z	VIXENA14
2 Jul Firmati Inc 20x, 46Herretharningerses Alpha "PAX TABLE FILLED" AT Z	
1613.6.44H NO MIRE MAXIMUMS OR MINIMUMS WILL BE STORED!	V 1K EN 4 BA
1613.6.44H NO THRE MAXIMLMS OR MINIMUMS WILL BE STOREDS	POR MIN II
A STATE OF THE STA	V 1X FN 4 1A V 1X FN 4 17 V 1X FN 4 15

	ALMAXI "KMAXI "AL WIG1	VIX PN 420
	TAMAX 1 1 CMAX 1 = TW I G 1	V 1K EN 421
	FMAX ( 1KMAX )=FST91	V 1K FN 4 22
	/MAX ( IKMAX )=ZST() 1	VIXEN423
		VIX FN 424
	CO TO 25	V IX EN 425
14	ALMICZ=ALSTUI	
	TW162*TST01	V IX EN 4.26
	MEMAX4 IKMAX1=AL WIG2	V IX 501427
	TAMAX(1KMAX)=TW162	A IX EVI 458
1 12 15 15 M	FMAX (INMAX)=FST()1	V 1X FN 429
	/MAK ( IKMAK ) = Z STO 1	V 1X EN 4 30
	CO TO 16	V 1X FN 431
16	ALWICI*ALWIGZ	V 1x FN 432
15	P 1990/1999	V 1X FN: 433
	ALWICZ=ALSTO1	V 1K FN 434
pr 1 Mr	INIG1 = TNIG2	
	TW1G2=TSTU1	V 1X FN 435
	ALMAKI IKMAKI #ALWIG2	V1X FP1436
	TAMAK(IKMAK)=THIG2	V IX Ff1437
	ZMAKE IKMAX )=Z STO1	V 1X CV 4 38
	TMAKE IKMAX D=FSED 1	V 1K EV4 39
	CO TH 16	V 1X 051440
1 HHH H IF 18 7	THARP=TSTO1	V TV PMAA1
* *	AL HARP =AL STO1	VIXTMA42
	1KM 111 = 1KM 14 & 1	V 1K F11443
	IFC 1KM tra_EQ_2001WR1 TE (6.2001) Z	V [X FH444
Mr	FUNDATCING 20K. 46H****HARNING**** ALPHA MIN TABLE FILLED AT L=.	
		VIXENAG6
990 F H H 1	1513-6, 44H NO MINET MINIMUMS OF MAXIMUMS WILL BE STORED!	VIX FNI447
	ALM I'M IKMINI *ALBARP	
	TAN INC CKM IN 1 * THARP	V IX PN448
	and the text of th	V IX FN 449
	老M Blook 是K 打 BM 多米尼芬耳形 是	v ix pn450
	C5 TR0 2-0	V IX FRABI
1.6	T=TMTG2-TW1G1	V 17 FY 452
police of the state of	SMF=1-07/T	N IN PAGE
	AMAP Z=tlaftC	V 1X PM 454
	Abak 2* - 400	VIK PN 455
AND ENGINEER	CG 22 [+1, 2	VIEW PNIASS
Halisanilla, V	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	VIK PN 457
	TENT HETADON II	MIK ON 458
Section in	The property of the property o	V 1X FD 459
a. Deligation	1506 11+126 ** 11	V IX PN 460
	ISUM12* ISU81161	V 1X PN 461
	CD 22 Umi+3	
	<b></b>	V 1X FN 462
	Tet:J=1.00	VIXTN46B
	IFCJJ NF-01TEM:-LAMSTOFFJJ	VIX FN 464
Marchine I Marie ( Marie	15U81=15U81149+JJ	V 1X EM 465
	150's 2= 150b 126 5+ 44	V IX EN 466
Bati a	ANAL Z=AHAP ZGAS 1 SUB 1 1= TEM1 + TEM3	VIXEN467
91	ARAP 3=ABAR 3LAKI SUB21+TEMI+TEMJ	VIX PHAGE
	T+:P1=180.00/P1	VIXENA69
	CP AT LATEMP TALABAR 24 SUMA 26TF MPT ABAR 34 SUMA 31	VIKENATO
B. Charle Hall	THE RESERVE OF THE PERSON OF T	V 1X PN 471
	SUMA?= J.Du	VIXENAT2
AND SHOP	SN 120 1=13-100	VIXENATA
	IFIALHIGZ-GF-ALSTIGN TO 20	
	CALCET #1	V IX ENATA
		VIX FN 475
	[#1.40]	V SKIPNATA
	There's	V 1X FM 477
	ALPR 16#C=*10	V TK TN 4 TH
	CO TO 3G	V 1x FN 479
100000000000000000000000000000000000000	NOT THE REPORT OF THE PROPERTY	

```
2 / LAMS TOTEL AMDA
                                                                              VIKEN499
      ALPENV#ALPRIM
                                                                              VIX FN481
       THIT . DOLOR. J. DOLOR TO 3C
                                                                              VIX P11482
      ALPENVEALWIGIELTWIGH-TIME 1+ (ALWIG2-ALWIG1)/(TWIGI-TWIG2)
                                                                              VIXTN483
   PL CONTINUE
                                                                              VIXFN484
C
                                                                              VIX EN 485
            FOR THE SIMPLIFIED ANGLE OF ATTACK CALCULATION. LLPT=2. ALPHAVIX FM486
C
         ENVELUPE IS SET EQUAL TO INSTANTANEOUS VALUE OF ALPHA.
                                                                              VIX EN497
       IFILIPT NE 2160 TO 91
                                                                              VIX FN488
      ALP ENV #ALP !!
                                                                              VITX EN 489
   91 CUNTINUE
                                                                              VIX EN 490
       IFILIPT.EQ. 11ALPENV BALPRIM
                                                                              VIXTN491
C
                                                                              VIXTN 402
C
            BETA, VOUT/G. AND DIBETAT/DZ CALCULATION
                                                                              VIXEN493
      DOM=40 C*AREF*CD/WTOTAL
                                                                              VIXEN494
      BELAST #RETA
                                                                              V 1X EN 495
      META=WITHTAL/(CD#AREE)
                                                                              VIXENA96
      IFI ICOMI 101. FO. 1) BE TA . WTOTAL / ICO *AREF-TH/CO)
                                                                              VIXTNA97
      1FC !COMC 16 ).FO. 2)BE TA =1. C/C WTOTAL/(CO+ARFF-TH/QD) 1
                                                                             VIX FN. 49P
      CENCH#7-ZSTO
                                                                              VIXEN499
       TECDENIM.EQ.O.D. DENOM.1.OD-10
                                                                              VIXPNSON
      PHT APECANTA-BETA STIVENOM
                                                                              VIX EN 501
      ZSTO #Z
                                                                              VIXEN SOZ
      V. GOUT=DER IV(1)/(G*DERIV(3))
                                                                             VIX 65 303
                                                                           VIX FN 504
            TESTS FOR PRINTING IF LOPT IS LESS THAN OR EQUAL TO 2
                                                                             VIX PN 505
      IFIZ ALE . (7 STEL. CDC) 100 TO 54
                                                                              VIX PUSDA
      IFCAUSTPRINTZ-ZI.LI. DELPPIIGO TO 50
                                                                             VIX PN 507
   54 PRINTZ=Z
                                                                              VIXENSOP
      IFCPRINTZ.LE. (ZBAPEC.IDC) )DEL PRI * 7PP2
                                                                             VIXIPNISO
      FREQ =- DELPP1
                                                                             VIX PN 510
                                                                         VIXENSLI
            SETTING PRINTOUT VALUES FOR LOPT-3 OR 4 CPTICAS
                                                                          V 1X FN 512
V 1X FN 513
  141 CUNTINUE
      IFILIPTALTABION TO 100
                                                                             V 1X PN 514
      BETA = WTOTAL /1CD+AREF 1
                                                                             VIXEN515
      V. GDOT = C. CDG
                                         V1XFN516
V1XFN517
      CVALUE (11+V
      CVALUE (41=C.CDO
                                                                           V 1X PN 518
      EVALUET 6 1 MPN
      CMALUECTB1#0*CDO
                                                                          V 1X EN 520
      PSIALP #U.COD
                                                                           V 1KFN 522
V 1KFN 523
      GO TO 20
C
           STURAGE FOR THE TAPE OPTION
                                                                             VIKIPNS24
  19. CUST INVE
                                                                            VIXENS25
      NNTAPE=MITAPEG1
                                                                             VIKENS 26
                                                                             WIKINS 27
C
            STORAGE OF VALUES FOR PLOTTING
                                                                             WINDHS 24
                                                                            V 1X FN 5 29
      IF (I.PLOT.FQ. 160)GO TO 90
      LPLUT=LPLOT61
                                                                             MIXIMS BO
      IFILPEUT.FO. LECTER TE CE. 108C1 Z. TIPE
                                                                         V 1K PN 571
 105. FORMATI 1HS 10X, 47H*****WARNING***** PLOTS HAVE BEEN OUT DEF AT Z=, VIX EN 532
     1613.6.16+ AND TIME = 7.21
                                                                             VIX PN 573
      LPLUTCLPLOTI *Z
                                                                             VIXTNISB4
      TPLUTELPLOTD*TOME
                                                                             VIXIPNERS
      PLO INFOLPENT I MITHE
                                                                             V 1X FN 536
      CEPLOTOLPLOT 1 = CD
                                                                             VIX EN SBT
      COMPLICTURE OT ) = COBSCOP
                                                                             WIKINSBR
      1. LZ .GT .ZTF ICUFPLTCLPLOTE -CDT INF 12.2 .10
                                                                             VIX PNS 39
```

```
1FLZ aLT aZTRICOFPLT(LPLO11 aCDF INF (2 .1 .1)
      CDIPLT (LPLOT) =CD.
                                                                                  VIX THISAS
      WINTER CLEUCT ) = HTOTAL /ki
                                                                                   VIXTN 543
      BETAPLELPLOT I MUETA
                                                                                   V 1X FN 544
      VPLOTE PLOTE NVALUETES
      V. GPLTILPLOTI = VCGDOT
                                                                                   VIX FY 546
      OPLUTTEPLOT) =QD
                                                                                   V 1X FN 547
      PSPLOT(LPLOT) =PS/2116.CDC
                                                                                   V 1X PA' 548
      FSI TPL (EPLCIT)=HSR1C
                                                                                   VIX FN 549
      ariieLtLeLoit=2001(1.1)
                                                                                   V 1X FN 550
      QDAIPL(LPLOT)=QDUT(4.1)
                                                                                   VIXENSSI
      PEIPLT(LPLOT) =PEPSH(1)
      PETPLT(LPLOT) =PEPSR(7)
                                                                                   VIX PN 552
                                                                                   V 1X FY 553
      PENPLIT (LPLUT) =PFP 5N( F)
                                                                                   V 17 FR 554
      1+UZ .GE .. 7 TR 1J = 2
                                                                                   VIX PM 555
      SECT ALT ATTRIJER
                                                                                   V1XFN 556
      QUIPLICLPLOT : = ODDILJ. 71
                                                                                   VIX FN 557
      43 . CITOGO = (TO LOLD PLAND
       ALPLBTILPLCT1=57.2957FDC+ALPENY
                                                                                   V IX EN 558
                                                                                   VIX IN 559
       IPHAPLOTICS HALE SIGO TO BC
                                                                                   VIX PUSAC
       TREOT#MPLOTEST
      SICOL DICL PLOT I = OCCUR ( IPLOT)
                                                                                   VIX PMS61
                                                                                   V 1X PM 562
   BC CHITTINUE
                                                                                  VIX EN 563
C
                                                                                   VIXENS64
                                                                                   VIX FNISAS
      THE TUPE 741 FO. TO CALL WAKE
                                                                                   V 17 PN 566
C
                                                                                   VIX PMS67
            IF MPRINE - C. PRINTOLT IS OMITTED BUT TAPES AND PLUTS MAY
                                                                                   VILK EN 568
                                                                                   WITH EVISION
        STILL BEING GENERATED.
                                                                                   VIX PNS70
       TENTHER INT. ED. COGO TO SC
                                                                                   VIXENST1
                                                                                   VITKIPHIST 2
                                                                                   VIV PHET?
       DECIMINE OF PRINICLT
                                                                                   VIXTN574
                                                                                   MINIONS75
      PRINTOUT OF TRANSLATIONAL QUANTITIES OF DEGREES BEFORE BEING
                                                                                  VINTENS76
                                                                                  WILK PNSTT
       PRIMED DUT.
       PSAULP-57, 2657 ED C+PVALILER 150
                                                                                   VIIK PNISTB
                                                                                   VIX PNS70
       CMMPH=57. 2957HD OHD NALILEICE
                                                                                   WINNENSRI
       PSPC=PS/2116-LDC
                                      "DINALUEILLO "CAMEP" DANLUEILAD "DETIA ZTR" VIXENSE?
       WRITING LOSSIFICHERS
      TOD WITH WOODUT . BE TAP . THE TIME THE PARALUE (14) PSALLE, DOW
                                                                                   VINCENTER
 LOBE FUENATION VILLERAX SANTRIANSUATIONAL QUANTITUESVILOX SHT IME FT. 2.
                                                                                   V DK FN 5H4
      15H Z=E15.6.5H V=E15.7.9H GAMF=E12.4.6H XR=E15.6.6H BETA=V1XFN585
FE15.4/25X, 4HZTK=T13.6.6H OD=F14.4.4H +1NF=E12.4.10H MOOTJG=EV1XFN586
911.4.9H BETAP=F11.4/25X, 3HTH=E14.4.7H TXT=E13.4.6H YH=E14.4.V1XFN587
                                                                                   VIKIPNISAR
      410H PSTALP=E11.4, PH DPW=F13.4
       DEL LATHOS EQ. CLOGO NO 75
LELZ JEL LUPBNDZ LOD NO 75
                                                                                    VIX EN 589
                                                                                    N'EKITH'SOD
       THE ALT DURNING TO PS
                                                                                    VIN FN 591
       WE THE BUILD TO THE THINDE TO THE NO.
                                                                                    VINTNESS2
 DUTS FURNATIONS, ZCK. TINPUT ATMOSPHERE BEING USED WHEN Z LESS THAN ".
                                                                                    VIKEN59B
    TE CONTINUE
                                                                                    V IV Pusqu
                                                                                    VIKENDOS
                                                                                    VIKEN 596
                                                                                    WIIN PH 597
             UPAC CORFECTION PRINTOUT
                                                                                    WILK EN SOR
        THE STEEL THE STREET
                                                                                    WILK FY SOO
        THE WAR WATER STREET
```

```
10(J.C).1)JJ=3
                                                                               VIX ENGOD
                                                                               VIX FM601
      REYLA=(REYL*LA)/CAPL
                                                                               VIKENAD2
      UK TILL 6, 1634) CD , CDP , TITLE (J) , CDF INF (2 , J. 1 ) , CDB , CDPU , TITLE (J) ,
                                                                               VIXER603
     ICCLINE(2.J.2).CDI.XBAK.RTYLA.XBARI
                                                                               VIXEN604
 10 14 FUEMAT ( 1HO 58X, 15HDRAG OUAN TITLES//25X, 3HCD=E14.4.7H CDF=E13.4, VIXEM605
           CDF INF (Ht + A 4+ 5H+ kB) = F12+4+19X+4HCDB = E13+4745 K+5HCLPU= E12+4, VIXFNCO6
     113H
     21341
             CDT INF (BL . A4. 5H. NB) =E 12.4.19X .4HCDI =E13.4/45 X.5HAEAR= £12.4. V IX FM6 )7
            RCYINFLA=.1.X.F12.4.1 ().GHX9AR1=F11.4) VIX.FNGOA
     212H
      1F(3,09,1)60 TO 1040
                                                                               VIX FN609
      WRITE(6, 1039) DELCOP, DECDEP, DECETO
                                                                               VIXENATA
 1339 FORMATISAX. 22HLAMINAR COI COMPONENTS/45 X. 6HCD1/P=F11.4.1JH CDI/SVIX FN611
     1F=+ 12K+F12.4+1CX+7HCD1/TC=F11.4)
                                                                               VIXEN612
                                                                               VIX FN 613
                                                                              V IX EN 6 14
           PPINTOUT OF CONFIGURATION PARAMETERS
                                                                                / IX 55 615
      LA=LA#12.CDC
                                                                               V IX FN 616
      CVALUE(6)=DVALUE(6)*12.CDC
                                                                               VIXEMAIT
      KP TTF( 6, 1: 36)DVALUF (6), THE TAD . LA.LAMDA.AR FF . WTCTAL.DELW. UELW 2.
                                                                               VIXE9618
     10ELW?
 1036 FORMAT (1HG 55X+13HCONF IGLRATION//25X+3HRN#E14+4+9H THET A=L11+4+ V IX FN620
     16H LA=E14.4.1CH LAMBDA=F11.4.84 APFF=E12.4/25X.2Hw=E15.4.
2"H DELW=E12.4.EH WABL=F12.4.1CH WTHRST=E11.41
                                                                               V 1X FN 6-21
      LA#LA/12.000
                                                                               VIXEN623
      EVALUE ( 6)=DVALUE ( 6)/12. CDG
                                                                               VIX PN624
C
                                                                               V IN PN 625
            IF THE MASS LOSS CPTIONS ARE NOT BEING USED. THE PHINIOUT IS VIXENERS
C
         BYP ASSED.
                                                                               V 1X 9N627
      IFTMUPT .. EQ .. O IGU TO FF
                                                                               VIX PN628
C
                                                                               V TX EN 6:20
            HEATING AND MASS LOSS PRINTOUT
                                                                               VIX PN630
       IFUT IMERAFOATOUTLAST=C.ubc
                                                                               VIXEN631
                                             V JXEN622
      Cf) 24 1=1, 8
      IFITLAST EQ. 4. CPC 160 10 24
                                                                               VIXPNARS
      0 INT(1)=01hT(1)&C.50C+10D0T(JJ.1) 80LAST(1))+(T1MFR-TLAST)
                                                                               VIXTN694
   24 OLASTCID#ODDICJU.I)
                                                                               V 1X PN 635
       IPUTLAST JED JOSCH CHOO TO 26
                                                                               V TX PNARA
      CINSTER INSTAL SDOWLUDUTITAL FORTLEST + (TI MER-TLAST)
                                                                               VITXIENGET
      DINSON = DINSONE ( . SOUP CODOT ( 4 . I) EQUISON = CITTURE R-TLAST)
                                                                               VIXTNOBE
      00 19 28
                                                                               VIX EN 639
   76 CO 27 1=1.6
                                                                               VIX FN 640
   27 UMMTCTTELL
                                                                               VIX FN641
                                                                  V IX PN643
      SINST#C..UPD
       2 INSON#C. ODO
   28 DSTL ST = () DOT( 1. (1))
                                                                               VIX ENGAG
      GLTSUN=QDOT(4.11)
                                                                               VIXPNAAS
      TLAST=TIMER
                                                                               VIX PM646
      DRITTELG. 10250000TLL-10-000TL4-10-USRTO-PSPD-TPERSELLUD-LU-L-1-80.
                                                                              V 1X EN 647
     'I COPOTE J.J., LUBAL J. = L. B.) ... (MOOT (LUBAL J.) ...L. J. - L. B.) ... (CENTEL J.) ... LUBLE LAND ENST, WEN FAME 48
     20 INSCN
 1035 FORM ATCINC GIK. SHMA'SS LOSSY/22X 11HQDOTESTAGI=EN1.407X 12HQBOTESUNV IX PNGSO
     116 1= 111.4. 7x. 644 SR TC=111.4. 7x.54P SP 0=112.4/12x.46HX ST ATTUNS ARE MY IMEN 651
     2EHOEWTAGES OF UNABLATED LENGTH/22%, 9HTANG. PT. JOK. BHK/LDEU. 2, bx, WINTERNOS2
     38HX/LA=G. 4. 5K, HHX/LA=C. 6. 5K, 9HX/LA=1. 75 . 4 K, HHX/LA=1. 9. 5K, HHX/LA=1. V 1X ENUS3
     4" 5X SHOONE R = RH // 12X THPEPSE BE13.4/12X THOUGH 9E13.4/12X THOUGH
     5T= -,8513.4712X.7HQ INT= -,8713.4722 X.113HD INTESTAGE= E11.4.24X.15HV IX BN655
     6 0 THIT SUMICH = ETI-4. THE TUPBULENT ONLY IT
                                                                               N IN THOSE
                                                                               VIXENGET
   PALICULATION OF
                                                                               V IN PMASA
       THE HAUPEL CT., CHOO TO 52
                                                                               WINTMARR
```

```
IFILOPT .EQ . 11GO TO 52
                                                                       V-TX-FN-6-6-1
                                                                      V 14 FN 662
          ROTATIONAL QUANTITIES PRINTOUT FOR LCPT # 0 CR 2
       PS 1P= 57. 295780 (*DVALUE (8)
                                                                       VIX ENA63
       THLP = 57. 29578D (*DVAL LE [9]
      PHIP=57.795780 (*DVALLE [10]
                                                                      V 1X FN 645
                                                                      V 1X FN 666
     ALPR 1P=57.295780 (*ALPRIM
     AL EN VP = 57. 29578D C#ALPENV
                                                                       V TX FN 667
                                                                     V IX FM668
     IF(SMF.FQ.C.CDC)TBAR #C.CDO
     IF(SMF.NE.O.UDO) TOAP =1.000/SMF
                                                                      V 1X FN 670
     AAA=PHIP/360.DC
                                                                       VIXEM671
     NNM= AAA
                                                                       V 1X FN672
     HBB=NNN
                                                                       VIX FN673
     PF IP =P+ IP- 260.0C*BBB
     IF(PFIP .LT .O.DC)PHIP=360.DQEPHIP
     WRITELE, 10331PSIP, THEP, PHIP, ALPRIP, DVALUE (13), DVALUE(11), CV ALUE(12V IX FM 675
                                                                       VIXEN676
    11. AL EN VP . CMO . CM . CN . SMF . TPAR
                                                                    THEV IX FN677
1033 FURNATI THO 55X, 21HROTATIONAL QUANTI TIES//25X,4HPSI=E13.4, LUH
    1ALP=E11.4.6H PHI=E13.4.1CH ALPRI M=E11.4/25X.3HPR=E14.4.5H
                                                                   U= . VIX EN678
    ZE14.4, 8H SMR = 13.4.1CH ALPENV=E11.4/25 X.4HCMC=E13.4.6H
                                                                   CM# EV TX FN 679
    213.4.7H CN = 14.4.7H SMF = F14.4.8H TBAP = E12.4 ) VIX FN 630
                                                                       VIXEN682
                                                                       VIX FN683
           INPUT ANGLE OF ATTACK PRINTOUT
                                                                      VIX FN684
   52 CONTINUE
      ALPHID = ALPHA * 57.295780 C
                                                                       VIX EN695
                                                                       VIXEN686
      WRITELE, 10421 ALPHID
 1342 FORMATI THO 41X, 37HTABLLAR INPUT ANGLE OF ATTACK AL PHA = , E12.41
                                                                       VIX FN687
      IFILOPT-LE-21GO TO SC
                                                                       VIX FN688
                                                                       VIX EN 689
¢
           SEQUENCING FOR LOPI=3 OR 4 WHICH CAUSES REPEAT OF CALCULATIONVIXEN690
C
        FOR NEXT SET OF VALUES IN TABLES. UNLESS FINAL SET OF VALUES HAS ALREADY REFN USED - THEN CAUSES RETURN TO MAIN PHUGRAM. PLOTTING ROUTINES ARE RYPASSED WHEN LOPT = 3 CR 4.
                                                                       V IX FN691
                                                                      V IX FN692
                                                                       VIXEN693
                                                                       VIXTM694
   49 CONT INUE
                                                                       V IX FM695
      IF(MAXVAL .EQ. C) WE LTE (6.1025)
                                                                       VIX FN AGA
      IF(MAXVAL .EQ.C)MAXVAL =1
 1025 FURMATI 1HJ. 1CX. ***** MARNING***** YOU FORGET TO INPUT MAXVAL FUR LY IX FN 697
                                         V IX EN 69B
    IDPT=3 OR 4 CASE 1
      IFINK .EQ . (MAXVAL-11160 TO 834
                                                  V IX EN 700
      NK =NKE 1
      en to 2
                     V IX EN702
C
           STOPPING TESTS FOR LOPT LESS THAN OR EQUAL TC 2. VIXEN 704
C
   94 CONTINUE
      IFIT ME .GT .T 3T IGO TO 51
      IFIZ .LE . IZSTE1. ODCI 160 TO 51
                                                                     V IX EN708
      IFILP .GF. 31GO TO 51
      GO: TO 50
   SI IFENPRINT NE . GICALL RITOUT
                                                                        VIXENTIO
      FENPLOTIJI.GT.CIGO TO 82
                                                                        V 1X EN 712
                                                                        VIXENT13
                                                            V IX EN714
V IX EN715
   81 CONTINUE
      GU TO 833
                                                                    V IX EN 716
V IX EN 717
           PLUTTING OPTIONS
                                                                        VIX EN718
      CONT INUE
                                                                        V 17 FN 7 19
      TE (WPLOT(11.LF.CIGO TO 84
```

```
CALL AVPLTITIXZ, TI, 7PLOT, COPLCT, ZPLCT, 3, 1)
                                                                                    VIX FN 720
      CALL AVPET(TIXM.T2.PLMTNF,COPPLI,ZPLOT.3.1)
                                                                                    V 1X FN 721
      CALL AVPLT(TIXZ, T3, ZPLOT, CDFPLT, ZPLCT, 3,1)
CALL AVPLT(TIXZ, T4, ZPLOT, CDIPLT, ZPLOT, 3,1)
                                                                                    V 1X EN 722
                                                                                    VIX FN773
  84 COUTINUE
                                                                                    V 1X FN 7 24
      IF(NPLOT(2).LE.O)GO TO 85
                                                                                    V 1X FN 7 25
      CALL AVPLT(TIXZ, TE, ZPLOT, BETAPL, ZPLOT, 3, 1)
                                                                                    V 1X FY 726
      CALL AVPLT(TIXT, T7, TPLOT, VPLOT, ZPLOT, 3, 1)
CALL AVPLT(TIXT, T0, TPLOT, PLNINE, ZPLOT, 3, 1)
                                                                                    V 17 F97 27
                                                                                    VIX FN 7 28
      CALL AVPLI (TIXT, 19, TPLO1, VCGPE1, ZPLOT, 3, 1)
                                                                                    V IX FN 7 20
      CALL AVPLICATION TO TPLOT, ZPLOT, ZPLOT, 3,1)
                                                                                    V IX EN 730
      CALL AVPLT(TIXT, TII, TPLOT, QPLUT, ZPLOT, 3,1)
                                                                                    VIX FN731
   85 CUNTINUE
                                                                                    V 1X FN 732
      IF(NPLUT(3).LE.C)SU TO 86
                                                                                    V 1X FN 733
      CALL AVPLICATING, IS. ZPLOT, WIDIPL, ZPLOT, 3., 1)
                                                                                    V 1X FN 734
      CALL AVPLT(TIXT, T12, TPLOT, PSPLOT, ZPLOT, 3,1)
                                                                                    V IX FN 735
      CALL AVPLTCTIXT, T13, TPLOT, HSR TPL, ZPLOT, 3, 1)
                                                                                    V 1X FN 736
      IFILAMDA.NE.C.JDCIGO TO 851
                                                                                    V 1X FN 7 37
      CALL AVPLTITIXT, T14, TPLOT, QD11PL, ZPLOT, 3,11
                                                                                    VIXENT38
      CALL AVPLT(TIXT, T17, TPLOT, QOBPLT, ZPLOT, 3, 1)
      CALL AVPLICATION, THE TPLOT PEIPLI, 2PLOT, 7, 1)
                                                                                    V 1X FM 740
      CALL AVPLICTIXI, T2C, TPLOT, PEBPLI, ZPLOT, 3,1)
                                                                                    V 1X FN 741
                                                                                    VIXENT42
      CO TO RE
 851 CALL AVPLTETIXT, 114, TPLOT, QD11PL, ZPLOT, 3, 1)
                                                                                    VIX FN743
      CALL AVPLTCTIXT, T15, TPLOT, 0041PL, ZPLOT, 3, 11
                                                                                    VIXEV744
      CALL AVPLT(TIXT, 116, TPLOT, QD7PLT, ZPLOT, 3, 1)
                                                                                    V 1X EN 745
      CALL AVPLT(TIXT, 117, TPLOT, QD8PLT, ZPLOT, 3, 1)
                                                                                    VIX EN 746
      CALL AVPLT(TIXY, 118, TPLOT, PEIPLT, ZPLOT, 3, 1)
       CALL AVPLT(TIXT, 119, TPLOT, PE7PLT, ZPLOT, 3,1)
                                                                                    VIX FN 748
      CALL AVPLT(TIXT, 12G, TPLOT, PERPL1, ZPLOT, 3, 1)
                                                                                    V IX FM749
   86 CONTINUE
                                                                                    V 1X FN 750
       IF(NPLUT(4).LF.C)GU TO 87
                                                                                    VIX FM 751
       CALL AVPLTITIXT, T21, TPLOT, ALPLOT, ZPLOT, 3,1)
                                                                                    VIX EN 752
   87 CONTINUE
                                                                                    V IX FN 753
       IF(MPLOT(5).LE.0360 TO 833
                                                                                    VIXEN754
                                                                                  V 1X EN 755
     CALL AVPLT(TIXT, T22, TPLOT, OCPLOT, 2PLOT, 3,1)
  833 CONTINUE
                                                                                    VIXEN756
       IF(10P(74).EQ.0) GU TO 637
                                                                                    VIX FN757
       IFC-IOP(77).EO.1) CALL AVPLT(TIXZ, 123, ZPLOT, WL1 P, Z FLCT, 108L, 1)
                                                                                    VIX EN758
       IF( TOP ( 78) .EQ. 1) CALL AVPLT(TIX2,T24,ZPLOT,WL2P,ZPLCT,[CBL,I)
                                                                                    V 1X FN 759
       IFI TOP (79) .EQ. 1) CALL AVPLTITIX2, 125, ZPLOT, WESP, ZFLCT, IEUL, 1)
                                                                                    VIX EN 760
       IF( TOP(8)).EQ.1) CALL AVPLT(TIXZ,TZ6,ZPLOT,NR1P,ZFLCT,1CBL,O)
                                                                                    VIX EN761
       IF( IOP(B1).EQ.1) CALL AVPLICITX2,727, ZPLOT, NR2 P, Z FLCT, 1Cat. U)
                                                                                    VIX ENTAR
       IF(10P(82).EQ.1) CALL AVPLT(TIX2,T28,ZPLTT,WR3P,ZPLCT,1CoL,o)
                                                                                     VIXENTA3
     CONT INUE
837
                                                                                     VIX FN 764
                                                                                     V IX FN 765
            OPTION FOR TAPE OF V. BETA, Z
                                                                                     VIXENT66
      THI ITAPE . EO . 0160 TO 834
                                                                                    V 1X FN767
       VVAR =U.GDO
                                                                                    VIXEN768
       WRITE(PIDATE, EMD, CASE, NN TAPE
                                                                                    VIXENT69
       HR ITE( S)(VVAR, ZPLOT(I), VPLOT(I), VVAR, RETAPL(I), VVAR, VV AR, VV AR,
                                                                                     VIX EN 770
      IVVAR , I=1, NNTAPF )
                                                                                     V 1X EN 771"
C
                                                                                     VIX FM772
            CHANGING ANGLE'S BACK TO UNITS OF DEGREES TO PREPARE FUR NEW
C
                                                                                    V 1X EN 773
          INPUT QUANTITIES.
C
                                                                                     V IX FM774
  934 CONTINUE
                                                                                     V 1X EN 775
       THETA=THETA/0.0174532500
                                                                                     V 1X EN 776
       CAMPO = GAMPO/G.C174532 SDC
                                                                                     V IX EN 777
       PH10=PH10/F.6174532500
                                                                                     VIX EN 778
```

VIX EN 779

PSIn=PSIC/C.C1745325DC

4 34,	THETA=THETA/0.01745325DC GAMEC=GAMEC/0.01745325DC PHIU=PHIC/0.01745325DC	V IX EN 775 V IX EN 775 V IX EN 776 V IX EN 777 V IX EN 778 V IX EN 779
<b>*</b>	The second secon	
e and		
•	RFTURN	V IX FN 780 V IX FN 781 V IX EN 782
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er el encede i la	The composition of the compositi	and and an experience of the second s
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	ին ին անագործում եր հանարած անկարությամբ առաջանարատում է ու ուսիրի չառատ եր որ հարարարարան անտանար և ու ու ուս Հայաստան	Property of the second of the

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WAKE
                                                                       WAKE
SUBROUTING WAKE "
IMPLICIT REALMA(A-H.O-7)
                                                                       WAKE
 REAL HOT "MUTNEY" MINEY ME"
                                                                       WAKE
COMMON /CPCCURY PCCURT11770)
                                                                       WAKE
CUMANA ACTUCHEY, TOUCHE (350) ......
                                                                       WAKE
COMMON DECUR. NOCCUR
TABL: CHCHEM; RHCSL, """
                                                                       WAKE
                      821,922,823,
                                                                        WAKE
COMMON /CNAKE/ PETAT. FRO1; FRO2, FRO3, PHI1; PHI2, PHI3, SIGNL1, SIGNL2,
                                                                       MAKE
                                                                              10
1 STONE 3. TAU1. TAU2, TAU3, WKALT. WSTALT, IND. I WAKE, I WPRAT
                                                                       WAKE
COMMON /CPCSEC/ P. TAU, STEMPS, PHI, XEZ, ZME, HH, BDW, C1, C2, E3, C4, C5
                                                                        MAKE
                                                                              12
COMMON / FPLINK/ BZ, PN, THETAC, DB, GAMMAF, CCTA, CDVA, PICIPH, PU,
                                                                       WAKE
                                                                              13
    AWI, PHOII, UII, HU, AMUII, AMINEC, MHOIC, HINEC, JUINEC, AMUL SO,
                                                                       WAKE
                                                                              14
    AMARED. 7. SC. FRET
                                                                       MAKE
                                                                             ·· 16
DIMENSION OCCUPITODOS
                                                                       WAKE
 DIMENSION NOCCURESCI
                                                                        MAKE
                                                                              17
 THINTYSTON WEIP (140). WEIP (160), WEIP (160), WRIP (160), WRIP (160)
                                                                       WAKE
                                                                              13
  DIMENSION RESPITADLE ZPLOTITACLE ALELALE TOPISO
                                                                       WAKE
-ntirasian Betaz (10).PHT1(10), PH12(10), PH13(10), WEALT(10)-
                                                                       MAKE
                                                                              20
 EQUIVALENCE [OCCUPICO1] + AREE)
                                                                       WAKE
                                                                              21
 COUTYALENCE (DOCURED 1614).CET
                                                                       WAKE
                                                                              27
 COUTYALENCE (OCCUPICATION)
                                                                        WAKE
EQUIVATENCE (OCCUP (O2)11.01
                                                                       WAKE
 FOUTVALENCE (OCCUPEDS) GAME)
                                                                        WAKE
 FOUTVALENCE (PCCUPICSA), MUINE)
                                                                       WAKE
 EQUIVALENCE (COCCUPIOSE) . MINE)
                                                                       WAKE
 FOUTVAIFNCE(DCCCR(GR(),MF)
                                                                       WAKE
                                                                              28
 SOUTVALTMOSIOCCURICES), PE)
                                                                       WAKE
 FOUTVILENCE (PCCLE (CAR) -PINE) -----
                                                                              30
                                                                       WAKE
  FOUTUN FMCF (OCCUPIOS21.RNMX
                                                                        WAKE
  FOUTVALANCE INCOME (9561, SHOTNET)
                                                                       WAKE
              INCCUPIONITH RHOE
                                                                        WAKE
                                                                               33
  FOUTVAL THEF
  COULVALENCE INCOUPICT21.TINE "1
                                                                       WAKE
  COUTYM ENCE COCCUPIONAL, THETA 1
                                                                        WAKE
  COUTY LENCE INCOME (CTC) . TE
                                                                        WAKE
                                                                              36
  FOUTVAL FACE INCCHAEGAZI. V
                                                                               37
                                                                        WAKE
  TOUTVAL THEE INCOMPLOASIV VE
                                                                        HAKF
                                                                              38
  FOUTVALENCE (OCCUPIONAL, MOST
                                                                        MAKE
  FOUTVALENCE (OCCUPTOTO), XBAR
                                                                              40
                                                                        WAKE
                                                                        MAKE
  FOUTVALENCE INCOURTOOLLY ZNX
  TOUTVALTMER (CCCUP(CC2), ZTP
                                                                        WAKE
                                                                              42
  FOUTUM SHEE LOCALINGOOD, COP
                                                                        WAKE
 "SOUTVALENCE TOCCUPTOTO), COB"
                                                                       WAKE
  EQUIVALENCE (OCCUPATION), COT
                                                                        WAKE
  FOUTUAL FREE (OCCUP (239) .- XLCH ...)
                                                                        WAKE
  FOUTVALENCE (OCCURCACIO), A
                                                                        WAKE
 FOUTVALENCE (INCCUR(00001), IOP)
                                                                        WAKE
 FOUTVALENCE (INCCURIOGSIA). INPL
                                                                        WAKE
 FOUTVALENCE (INCOUPTOOSOS) - I PLOT 1
                                                                        WAKE
                                                                               10
 FOUTVALFACE TECCHETCISELY. WLIP
                                                                        WAKE
 COUTED FACE (PCCHREGIALL), WERR
                                                                        WARE
 CONTACTOR (SECURICION) MEST
                                                                        WAKE
 COUNTY LENGE (PCCHP (COPOL), WHIP
                                                                        MAKE
                                                                               -
 POUTVALENCE (POCURICOPALI, BAZA
                                                                        MAKE
 FOUTVALENCE (PCCHR (011211) - WP3P - )
                                                                        WAKE
                                                                               **
 COUTANTEMER TECCHATCHETTIE THECT )
                                                                        WAKE
 TOTIEVAL CHOCK (MOCKLISTISS), MOUT 1
                                                                        WAKE
  MANCE ISTANAMIA HZSRN, THETAC . MP. GAMMAE . COTA . COVA . PICIPU. PL.
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AMIL-RIPULLING FULAMING APERFC PRINTC HERFC LUENFC LAMBLED.
                                                                                                                                                                                                                                                                                                     WAKE
                                                                                                                                                                                                                                                                                                                              ć0
                                                                                                                                                                                                                                                                                                     WAKE
                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                     WAKE
                                                                                                                                                                                                                                                                                                                               62
                                                                                                                                                                                                                                                                                                     WAKE
                                                                                                                                                                                                                                                                                                                               63
                                          SUMPOUTTING WAKE CALCULATES "SOME QUARTITIES REEDED BY SUE-
                                                                                                                                                                                                                                                                                                     WAKE
                                                                                                                                                                                                                                                                                                                               64
                                  ROUTINES FLOWE AND POSEC. THEN CALLS THESE SUPROUTINES TO
                                                                                                                                                                                                                                                                                                     WAKE
                                                                                                                                                                                                                                                                                                                               45
                                  CALCULATE THE VEHICLE MAKE LENGTH AND CROSS SECTION AT EACH OF WAKE
                                   THOSE HADAR PROMONETES
                                                                                                                                                                                                                                                                                                                               47
                                                                                                                                                                                                                                                                                                     WAKE
                                                                                                                                                                                                                                                                                                     WAKE
                                                                                                                                                                                                                                                                                                                               # P
                                                                                                                                                                                                                                                                                                     WAKF
                                                                                                                                                                                                                                                                                                                               40
                       IFI IMPUNT. SO.O) GO TO 10" """
                                                                                                                                                                                                                                                                                                     WAKE
                       WRITE(4.1000)(A(T).T+105.112), AREF.ZTR,ZNX,D,RNNX,THETA.GAME.CC. WAKE
                                                                                                                                                                                                                                                                                                                               71
                    1 COP+COP+COT+PE+PINE+MINE+PHOIN1+V+TINE+MUINE+MC+RHOE+CPC+TE+
                                                                                                                                                                                                                                                                                                     WAKE
                    3 VE, WYDT, KHAP, KLIIM
                                                                                                                                                                                                                                                                                                      WAKE
                                                                                                                                                                                                                                                                                                                                77
                                                                                                            WAKE
                       TELENKAL PARSTAL TANDAXDARAL TAXLON) GC TO 30
                                                                                                                                                                                                                                                                                                      WAKE
                                                                                                                                                                                                                                                                                                                                75
                       HEIPELPENTE = 0.00
                                                                                                                                                                                                                                                                                                      WAKE
                                                                                                                                                                                                                                                                                                                                76
                       4L20(1 PL 07) = 0.00
                                                                                                                                                                                                                                                                                                                                77
                                                                                                                                                                                                                                                                                                     WAKE
                       HETPER OT - 0.00
                                                                                                                                                                                                                                                                                                     MAKE
                                                                                                                                                                                                                                                                                                                               78
                       44 1041 OLDT = 1.00
                                                                                                                                                                                                                                                                                                      WAKE
                                                                                                                                                                                                                                                                                                                               79
                       WAKE
                                                                                                                                                                                                                                                                                                                               PO
                        WP 1P(I,PLOT) * 1.00
                                                                                                                                                                                                                                                                                                      MAKE
                                                                                                                                                                                                                                                                                                                                91
                                                                                                                                                                                                                                                                                                                               F2
                                                                                                                                                                                                                                                                                                      WAKE
                                                                                                                                                                                                                                                                                                      WAKE
                                                                                                                                                                                                                                                                                                                                P3
                       TALL INTEPPISO. IMAKETEPLETICHETTINKALT. BFTAZ. BZ1
30
                                                                                                                                                                                                                                                                                                                               F4
                                                                                                                                                                                                                                                                                                     WAKE
                       FUGT # 1.03
                                                                                                                                                                                                                                                                                                                                P5
                       WAK F
                                                                                                                                                                                                                                                                                                                                PA
                                                                                                                                                                                                                                                                                                      WAKE
                                                                                                                                                                                                                                                                                                                                67
                                        THE ENLINHING CALCULATIONS ARE FOR ROSEC
                                                                                                                                                                                                                                                                                                                               68 ,
                                                                                                                                                                                                                                                                                                      MAKE
                        X07 # 97
                                                                                                                                                                                                                                                                                                      WAKE
                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                WAKE
                                                                                                                                                                                                                                                                                                                                90
                               HH . ZNX / FUG1
                                                                                                                                                                                                                                                                                                      WAKE
                                                                                                                                                                                                                                                                                                                                41
                                                                                                                                                                                                                                                                                               HAKE
                          #1 # P411
                                                                                                                                                                                                                                                                                                                               43
                                                                                                                                                                                                                                                                                                      WAKE
                            A+ + (2)
                                                                                                                                                                                                                                                                        WAKE
                           C1 - C(1)
                                                                                                                                                                                                                                                                                                      WAKE
                        - cr = r(1)--
                                                                                                                                                                               and interest represent a resident and control of the control of th
                                                                                                                                                                                                                                                                                                                                96
                            C* + C+*)
                                                                                                                                                                                                                                                                                                    WAKE ST
                                                                                                                                                                                                                                                                                           -WAKE
                                                                                                                                                                                                                                                                                                                                59
                                                                                                                                                                                                                          WAKE LCO
                            THE FOLLOWING CALCULATIONS ARE FOR PLONE.
                        THETAC - THETA
                                                                                                                                                                                                                                                                                                    WARF 1C1
                                                                                                                                                                                                                                                                                      WAKE 1C2
                         GAMMAF - MARSIGAMF)
                                                                                                                                                                                                                                                                                                      WAKE 1C3
                                                                                                                                                                                                                                                          - WAKE 104
                             COVA - SCO-ICOF & COS & COT 11 + AREF
                                                                                                                                                                                                                                                                                                      WAKE 1C5
                                                                                                                                                                                                                                                                                             . WAKE 1Ch
                                                                                                                                                                                                                                                                                               WAKE 1C7
                                                                                                                                                                                                                                                                            WAKE 1CR
                          1111 = 41 NF
                         PHON . PHOINE
                                                                                                                                                                                                                                                                                                      WAKE 109
                           100 **** FUNT
                                                                                                                                                                                                                                                                                          WAKE -110
                          THETTING OF TO SE
                                                                                                                                                                                                                                                                                                     WAKE 111
                                                                                                                                                                     WAKE 113
                           198714F_LT_P_821 880-70-70-70--
                            011F - 0.70
                        TO TO TO THE TOTAL PROPERTY OF THE PROPERTY OF
                                                                                                                                                                                                                                                                                    - WAKE 114
                         COINE . COINE & ALIGIDAL TINF+MIT-13
 *1
                                                                                                                                                                                                                                                                                                      WAKE 115
                         on to T
                                                                                                                                                                                                                                                                                     " I I THE THE PARTY OF THE PART
                                                                                                                                                                                                                                             WAKE 117
                         CPINC = ALLIED & ALLIED TIME
OF TO TO
                                                                                                                                                                                                                                                                                                      WAKE LIR
                         CPINE . 234 BOO
                                                                                                                                                                                                                                                                                                       WARF LIS
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" WAKE 120
                                                                                                                          WAKE 121
         AMILU . MIJTHE
        A MARKET ME MARKET THE PROPERTY OF THE PROPERT
                                                                                                                         WAKE 122 ...
         PHOTE # RHOP
                                                                                                                          WAKE 123
         HINEC * LOESTEPLICS
                                                                                                                      " WAKE 124
         HINER # VE/FUGE
                                                                                                                          MAKE 125
       ... WAKE 126
         PUCT # PICTOHAMINEDIAMU
                                                                                                                          WAKE 127
   AMBISH # 1005.00 * (HINEC / HU)**.2500 * CSGRT(FUG3 * FUG4).
                                                                                                                          WAKE 129
                                                                                                                 - WAKE 130
    ······ 40 TO TO
         FUNS # 1.0?#9H9L#UU#08/ AMEU
                                                                                                                          WAKE 131
         AMBLED . CETA ) # PHOU * UU *"AREF* FUGE**C(77)"
                                                                                                                     " WAKE 132
           AMARLO * -WOOT
                                                                                                                          WAKE 123
       - Trimopt.Po.o) AMABLE = 0.000
                                                                                                                         WAKE 134
                                                                                                                          WAKE 135
           7 = 7NX / FIRST
        TEL. $2000498.GT.RN) SO TO 101
                                                                                                                         WAKE 126
          00.0 = 32
                                                                                                                         WAKE 137
                               98-92 10-1 K 99-1 K1 M P
         -- nr rn 102
                                                                                                                         WAKE 128
       SC = (+TPO * PP - PN + CONSTRUCTACE) / DSINITHETACE
                                                                                                                          WAKE 139
      *** WAKE 140
                                                                                                                          WAKE 161
                                                                                                                         WAKE 142
                                                                                                                          WAKE 143
         WAKE 144
          TE( 1WPPNT. FQ.1) WRITE16.20001 FNET. 81
                                                                                                                          WAKE 145
         TELTMENT. FG. 1) WETTELF TRAME!
                                                                                                                         WAKE 146
                                                                                                                          WAKE 147
          MAKE 14P.
          CALL THY FREETING INAKE-ZPECT (LPLCT) . WKALT-PHIL-PHIL
                                                                                                                          WAKE 149
          m = me())
                                                                                                                          WAKE 150
          TAU . TAUL
                                                                                                                          HAKE 151
          WAKE 152
          CALL POSSCIBLECART, WELPILPLOTI, WRIPILPLOTI, 10P(67)1
                                                                                                                          WAKE 153
          TELMRIPILPIOTI.CT.O.CO) CO TO TE
                                                                                                                          WAKE 154
                                                                                                                          WAKE 155
          wetsirplutt # 0.00
          TECTURE. FO. 31 WRIPTLE OT1 = 10.00+DLCG10(WRIP(LPLOT))

WAKE 158
WAKE 159
WAKE 160
WAKE 161
34
•
                                                                                                                MAKE 162
          TREETOPEARE A TERETITIVE C.O. GO TO SO ....
1,0
          CALL INTEPPISO. WAKE, ZPLCTILPLCT), WALT, PHI2, PHI3
                                                                                                                          WAKE 163
           F = P007
                                                                                                 THE RESERVE ASSESSMENT OF THE PARTY OF THE
          TAU . TAU2
                                                                                                                          WAKE 165
          WAKE 165
          CALL SCSECIBLEMET, WESPELPLOT) . NR2P(LPLOT) . 10P(68)
                                                                                                                          WAKE 167
          TETHERPELPENTI.GT. 0.001 CO TO AS
                                                                                                                          WAKE LEP
          WE TOLL TLOTT # 0.00
                                                                                                                          WAKE 169
          IF ( 1036, 60.4) - Wespellplay = 1.00 -----
                                                                                                                        WAKE 170
                                                                                                                          WAKE 171
                                                                                                                   MAKE 172
            IF (ITAL .FO. 3) heze(LPLOT) . 10.00+0LCGlo(weze(LPLCT))
15
                                                                                                                          WAKE 173
                                                                                                                        . WAKE 174
                                                                                                                          WAKE 175
          TELLITORISON & TOPETELLINECTON OF TO AC
                                                                                                                          WAKE 176
          CALL INTERPETO, IMAKE, ZPLOTEL PLOTE, WKALT, PHI3, PHII
                                                                                                                          WAKE 177
          r m reeps
                                                                                                                           WAKE 178
          TAIL IN TAILS
                                                                                                                           WAKE 179
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CIGHAS # SIGNL3	WAKE 100
CALL POSSOCIBLESHET, WL3P(LPLOT), WR3P(LPLOT), (OP(69))	WAKE 181
TECHRAPELPENTE CT. 0:00) CO-TO-FF	
₩¤ %¤ ( Tr   m ) . no	WAKE 163
	WAKE 184
GO TO AO	WAKE 125
. கூற முற்றாக வடிய கூறை பெறுக்கு படுக்குக்கும் கூறுக்கும் மடிய கூற கூறுக்கும் மடிய கூறுக்கும் மடிய கூறுக்கும் மடிய கூறுக்கும் கூறுக்கும் மடிய கூறுக்கும் கூறுக்கும் மடிய கூறுக்கும் கூறுக்குக்கும் கூறுக்குக்கு குறுக்கு கூறுக்குக்கு குறுக்கு கூறுக்குக்கு குறுக்கு கூறுக்கு குக	WAKE 186
". !FIIML.FQ.3) WM3M(LPLOT)=10.NO+DLOGIO(WR3P(LPLCT))	WAKE 187
ki to tambaniji Diri jambisha tiki nir r <del>oma mamamala n</del> i h <del>ambanan tamban minin da minin nir ni da manamala ni ji seksil di ni da da da da qiri</del>	WAKE 188
	. WAKE 189
A	WAKE 190
•	, WAKE 151
OCD   FORMAT(1HO   11HWAKE ENET   1 PF1 = 7; "1 X 4HR1 = E15.7) "	WAKE 152
000 F0FMAT(1H03X6HA(10#)8X6HA(106)FX6H4(107)8X6HA(100)8X6H	HATICTIRXGHATWAKE 193
"""11101 "8X4HA(1111) 8X4HA(112)10X4H68EF/1H 1P9E14.7/1H 11X	SHZTP11X3HZNXWAKE 154
2 13X1HD10X4HRNNX9XFHTHETAL0X4HGAMF12X2HC011X3HC0P11X3HC0P11X3HC0P1X3HC0P1X3HC0P1X3HC0P1X3HC0P1X3HC0P1X3HC0P1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HPP1X4HP1X4H	
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## INOT REPRODUCIBLE

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CHRECHITIME TORM	ZPRN 3
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CHUMPA / 1x COM/ XCOM(200), 1CCM(200)	ZPRN 5
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CRYVON /MIN/ALDE(201.UP(201.AMLLT(20).CALDW(20).CTP(20)	ZPPW 7
COMMON /INPT/IPPOC, IN, NCCNS, IPNT, IFX; LIMIT, IRAND	**************************************
COMMON / FORT/FRR. PPAND. FAC. DELTA	. ZPPH 9
COMMON/ONL /OVECT(201, HRF, LRED	ZPPN 10
COMMON /NALTEG/FGSM, MALT	ZPRM 11
COMMON CHILLY SHIRT(25)	7 PP 12
- EGIIIAVELNICE (N.CHII) VI BHV)	7PRM 13
FOULVALENCE (XCCM(2), BETA)	ZPRM . 14 -
FOUTVALENCE (XCCM(3).GAMMA)	7 PPM 15 ZPRM 16
TOUTVALENCE (KCCM(4).DEL)	2PRP 17
POSITIVALENCE (KCCMCC).RATE)	ZPRM 18
FOUTVALENCE (KCCMIF). TOL)	7 PR 10
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USED IN THE PROGRAM.	ZPRM 23
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119(5) = 0.00 	ZPR# 39 ZPR# 40 ZPR# 41 ZPR# 42
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XCDA(4)0100		ZPRH	61
		ZPRN	62
MCOM(5) a . MOO		PPRN	63
THE TENTON OF MALE AND A STATE OF THE PROPERTY	Elic ordinadades con es page 1 de Mestreir es para de 3 de 1	ZPRN	64
		ZPRM	
TETURAL TO COMPACION OF NO NEW OWN CONTROL OF THE C	Manual Manual Control of the Control		65
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	TMPLICIT REAL *PIA .H.D-7)	ZPRS	3	
in a su <del>ktion</del>	THINSTIN ACTION ACTION ACTION	ZPRS	· Ž	
-	A TOURNETON WE STATE MENTAL	Z PR 5	in.	
4		-		
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17	SUBPROUTING THE PERSON THE PLEMENTS OF THE A AND B AREAYS	ZPRS	7	
Mill and trans-	""" WHICH ARE CHEFFICIENTS OF "THE CURVE FITS CONTAINED IN "VARICUS"	ZHRS	· P	comic mount -
r.	CTHER SUGROUTINES.	ZPRS	9	
	The second control of	7 PPS	10	н н
r		ZPRS	11	
·	NO TABLE IN C. D. C. D.	ZPRS	12	- 1
	CORPETCIENTS FOR THE PROBABILITY DISTRIBUTION BETWEEN FREE	ZPR5	13	
T			14	undydyn i hawnagely
offen in a m	POLICINE AND CONTINUUM FURN REGIMEST USED IN SUBROUTINE CHAGOO			
	R(01)=0.9309200	ZPRS	15	
i ili ije <b>us</b> iji ije es	P(02)=0.1196700	ZPRS	15	***
	R(03)= -0.222499-1	ZPRS	17	
manager of a special	18(04)=-0.2*63A9-2	ZPP 5	19	***
	R(nc) = (0.9032F0-2	ZPRS	19	
<b>Mpspm Half emilia</b>		ZPRS"	20	-
	R(07)*0.421830-2	ZPRS	21	
dente e e la chidade		7 PRS	22	
mpont-in a p samm-r	the second secon	ZPPS	23	
	R(08)= 0.13412N-2			***
**************************************	MILDI= 0.797200-A. INC. 100 CONTRACTOR CONTR	ZPRS	24	
	R(11)=0.2210FD-2	ZPPS	25	
simulation -many	-R(12)= 0:104391-5	ZPRS	59.	
	8/13/1 = 0.213930-4	IPRS	27	
i <del>mmeğ</del> enni <del>oğ</del> ılım <b>ı</b> nı	- 9(1/1)=0, 996020 4	ZPRS	28	* H . H . H
	91151=0.123417-5	IPPS	20	
Howards and the	CONTRACTOR TO THE CONTRACTOR THE CONTRACTOR OF T	ZPRS	30	4 11 80
		LPR'S	31	
	*([17]= 0 -4 04 310-7	ZPRS	32	
		ZPRS	23	
	11171 = 0, 64306n-5			E H . 4 . 1
		ZPRS	34	
	# (21) = -D. 225320-11	7PRS	25	
*******	The control of the co	ZPRS	36	Metter HH HA
	CONFERENCE USED IN FINDING PAXIMUMS AND MINIMUMS OF PLPHA	ZPRS	37	
*	一一一种的一块种的一块的一块的一块的一块的一块的一块的一块的一块的一块的一块的一块的一块的一块的	ZPRS	38	+ 164 1
• 653		ZPRS	39	
• • · max 9	MIL 121=1.0424000-01	ZPRS	40	11
	Mt 191-7.5249690-02	ZPRS		
		ZPRS	- 42	
400		ZPRS	43	
	4(15) 1, *520020 -C2			4.9
I and another	The state of the s	ZPRS	45	
	HI 171 4. 3230470-C3	_		
To a Hilliam H	TATAL NO PORTE OF PROPERTY OF		46	
District to	W(Tu)=5" uudu040-04	7PRS	47	
- H	A C POI HILL M REARCHECE	ZPR'S	特際	1991 / 97
do:	PICE 1 = - 4 SOURCE PECC	ZPRS	49	
-	A/ 22 ) =- 1,-070 A t-ch-C1	-ZPRS		
	A1291 =- 2. CTTAGEDEDC	7 PRS	31	
	- AF2K1=4,2144325-01-	ZPRS	- 52	<del></del>
	A(2K1 = 6. MAI 9011 - 07	ZPPS	***	
	ALZA MI 2 PAST TO DESCRIPTION OF THE PROPERTY OF THE PAST OF THE P	2005	54	н н•
		JPP S	55	
	4(27) = 3, 777749 (C2	- ZPRS	*6	
NYS T	A ( 24 ) 47 , (0 ) 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47 ( 47 ) 47	EPRS		
	MI 20) = BSI KO CONCL		57	
	Mil (10) mil (有力を有有力な) million seems a seems 1 to 1901 - 1 million 10 - 1	JPP 5	99	
	性i( 201 b =	1 bbc	*9	

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ZPRS 120
At1121#7.09 05
                                                                          ZPRS 121
                                                                          ZPFS 122
    - CORFFECIENTS-USFO-IN-BLUNT-COME PRESSURE DISTRIBUTIONS
   FIR CONG HALF ANGLE ANGLE LESS THAN 20 DEGREES IN AFRICE
                                                                           7PRS
                                                                                123
 A [ 135]=3.0636063801
                                                                          ZPRS 124
                                                                          ZPR 5 125
 A(135)=+1.5924694D1
                                                                          7PRS 126
 A(13")=2.139092020000
 A(139)=4.5075261600
                                                                           ZPRS
                                                                                127
                                                                          ZPRS 129
 A(137)=-3.1997514FPO
                                                                           ZPRS 129
 A(140)=1.1761463000
 V(141)=-V. USeute 1cuc
                                                                           ZPR 5
                                                                                130
                                                                           ZPRS 131
 A(1/2)=1.3371717000
 M11431=-2.267589148-1
                                                                           ZPFS 132
 A(164)=-4.7418259301
                                                                           ZPRS
                                                                                133
                                                                           ZPRS
                                                                                134
 A(144)=1.9959879/01-
 A(144)=-2.7538929300
                                                                           ZPRS 135
                                                                           ZPRS
                                                                                126
 A1147)=-8.2600169990
                                                                           ZPRS 127
 A(149)=5.0601641500
 A(140)=-1.4883C57600
A(150)=5.58009C4500
                                                                           ZPRS 138
                                                                                139
                                                                           ZPRS
                                                                           ZPRS
                                                                                140
 W( 141) = -1- 1dev dbuche
                                                                           ZPR5
 At1521=2.56237#350-1
                                                                                141
 A(153)=1.4426572001
                                                                           ZPPS
                                                                                142
                                                                           ZPRS
                                                                                143
  4(156)=-6.1270301300
                                                                           ZPRS 144
  A(149)=9.736555611-1
  A(154)=3.3502052700
                                                                           ZPRS
                                                                                145
                                                                           ZPRS
                                                                                146
  A (157)=-1; 5080 C27200
                                                                           ZPRS 147
  A(189)=4.71P003870-1
                                                                           ZPRS
                                                                                148
  41157)=-1.8450126300
                                                                           ZPRS 149
  A(160)=5.495376290-1
  4(161)= -6.9064774CD-2
                                                                           ZPRS 150
                                                                           ZPRS
                                           TSTAR IN SUBROUTINE CHAGCC. ZPRS 152
     THE PROPERTY OF THE PROPERTY OF THE CALCU
                                                                           ZPRS 153
 A (152) = 1. F2769 EF073
                                                                           ZPRS
                                                                                154
 10143) = 2.13043 EqqnC
                                                                           ZPRS 155
 ※で見る株1=−2-071057630~4
 101451= 5.521092210-9
101641=-1.3159173703
                                                                           ZPRS 156
                                                                                157
                                                                           ZPRS
                                                                           ZPRS 148
 4 6 1 4 7 1 3 7 2 2 2 1 9 4 5 7 2 7 0
                                                                           ZPRS 159
 A (168) == 0.05342 JG70-A
                                                                           ZPRS
                                                                                140
 1.164) = 1.364PO47PD+7
 # (170) = 1.09951 50502
                                                                           ZPRS 161
                                                                           ZPRS
 411771 - 1.013401440-1
411771 - 4.648595920-5
                                                                                162
                                                                           ZPRS
                                                                                 163
 X11731=-1.2079*41*0=2
                                                                           ZPRS- 164
                                                                           ZPRS 165
    - MARKATOTENTS-USED-THE DALCULATING-THE FREE MOLECULE PRACE
                                                                           ZPRS
                                                                                 166
    CHEFFICIENT ON THE SPERICAL NOSE. USED IN SURROUTINE DRAGGO. ZPRS
                                                                                1.67
                                                                           ZPR$ 168
 111741 + 0.47366CO
 A(175) = -0.007320-1
                                                                           ZPR5
                                                                                 169
                                                                           70RS 170
 1(174) = 0.70600m+t
                                                                           7PRS 171
 A11771# 0.126270-2
                                                                           ZPRS
 6(179) + 0.118630-T
                                                                                 172
 A11791= 0.904750-3
                                                                           ZPRS 173
 $11901#-0.A44910-2
                                                                           -ZPRS 174
                                                                           ZPRS 175
 111211#-0,347470-3
                                                                           ZPRS 176
 11 1 1 21 ± 10 11 10 21 00 12
                                                                           ZPRS 177
 4(183) # 0.512590 ·
                                                                           ZPRS 178
 A ( 184) #- 0. 137227-3
                                                                           ZPRS 179
 * () *51.0-0.101*15-5
```

```
4(186)= 0.112216-4
                                                                        ZPRS 180 . ...
A(187) =- 0.39507C-A
                                                                        ZPRS 181
VI 1 641 =- 0. 25445 L-V-
                                                                        ZPPS 182
A(199)= 0.37457C-7
                                                                        ZPRS 1F3
A(190) = "O.12791"=7
                                                                        7PPS 184
A(191) = -0.12579C--8
                                                                        ZPRS
                                                                             1 95
\[192]=\0.119650~\a^*
                                                                        ZPR 5
                                                                             186
A(133)= 0.16016F-10
                                                                        7PPS 187
                                                                        ZPRS
                                                                             188
     COFFFICIENTS USED IN CALCULATING THE STRONG INTERACTICA
                                                                        ZPRS
                                                                             189
   ERAG CORFFICTENT FOR CONF HALF ANGLE LESS THAN 15 DEGREES.
                                                                        ZPRS: 190
   USED IN SUPPRUTINE DRAGGO.
                                                                        EPRS
                                                                             151
A(700) == 3.90021F00
                                                                        ZPES
                                                                             192
A(201)=0.539100200
                                                                        ZPRS 193
1(202)=0.175771300-
                                                                        ZPPS
                                                                             194
A(203)=0.1198745D-01
                                                                        7 PRS
                                                                             165
A(20/)=0.551859500
                                                                        ZPRS
                                                                             196
^(205)=0.515930100
                                                                        ZPRS
                                                                             197
A(204)=3.499411F-04
                                                                        ZPPS
                                                                             158
1(207) =- 0.48253270- 01
                                                                        ZPRS 139
                                                                        ZPRS
                                                                             200
     COMPRICIENTS USED IN DETERMINING THE BLUNT COME FOREPCLY
                                                                        ZPRS
                                                                             201
   PRESSURE PRACE COMPETCIENT FOR CONF HALF ANGLE 4 TO 10 CECPEES
                                                                        ZPRS
                                                                             2 C 2
   INCLUSIVE.
              USED IN SUPPOLITINE DRAGOO.
                                                                        ZPRS
                                                                             203
A(211) = | 2.859586240 |1
                                                                        ZPRS 2C4
A(212)= -1.341871130 1
                                                                        ZPRS 2C5
A(213)= -9-234465659-1
                                                                        ZPRS
                                                                             206
A(214)= -6.615724260-1
                                                                        ZPPS 2C7
1(215)=" "1.1690290100
                                                                        ZPRS 2CB.
442161=
          1.6906156100
                                                                        ZPRS 2C9
4(217)=
          1.8400334100
                                                                        ZPRS 210
A12181=
        -2.69534A73F0
                                                                        7PRS 211
A(2191="#2.566/40/500"
                                                                        ZPRS
                                                                             212
A(220)=
        -3.5693417700
                                                                        ZPRS
                                                                             213
A(221)=
         K.044779229 1
                                                                        ZPRS 214
4(222)= -3,0279349200
                                                                        ZPRS
                                                                             215
1(223) = """ . PODE #12700
                                                                        ZPRS
                                                                             216
A(224)= -3.374370320G
                                                                        ZPRS 217
1(225) = -7.4984451 9061
                                                                        ZPRS
                                                                             218
4(224) = -1.410238310G1
                                                                        ZPRS
                                                                             219
1 (727)=
         2.32733999961
                                                                        7PRS 220
#17281=
         1.05707834962
                                                                        ZPPS
                                                                             221
A12291#
         1.40340777041
                                                                        7PRS
                                                                             222
A(2301#
         7.2199503000
                                                                        7PR S
                                                                            223
A(2311="1-2.9355727CPG1
                                                                        7PRS
                                                                             224
A12321#
        -- 475F7211061
                                                                        ZPPS
                                                                             225
        -8.06730866061
112331=
                                                                        ZPPS
                                                                            226
         Samponsante.T
4123/14
                                                                        ZPRS
                                                                             227
M12351=
         ואחשיפון וחדם. פ
                                                                        ZPPS 228
412361*
         2.2664 499 4011
                                                                       ZPRS 229
1(737)=
        -1.1349FA2/ NG3
                                                                        2PRS 230
112301 - 2.45554FPFM61
                                                                        ZPRS 231
        "-2.971 #25# APEL
112301m
                                                                        2PR$ 232
*(240)*
         1.1042767062
                                                                        ZPRS
                                                                             233
VI 35 1) =
         7.41425024061
                                                                       ZPRS 234
113121 *
         2.4903*03*62
                                                                        ZPRS 235
117171= 1-1.817790*044
                                                                        JPRS 236
**************************
                                                                        2PRS 237
117'91= -2.555612291762
                                                                       JPR$ 230
         P. Glespacanes
11 2 1 4 1 m
                                                                        ZPRS 239
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COCCICIONE MARO AND ADDRESS OF THE PROPERTY OF	ZPRS 240
COEFFICIENTS USED IN DETERMINING THE BLUNT CONE FCREPCEY	7PRS 241
PRESSURE TRAG COFFETC IENT FOR CONE HALF ANGLE GREATER THAN	- " ZPRS 242
10 AMD LESS THAN OR EQUAL TO 20 DEGREES. USED IN SUPROUTIN	E CRZPRS 243
1.234364Z47C	" ZPRS 244
A(249) =9.6082C6519.2	ZPRS 245
A(249) = 4.941918560-1	ZPRS 246
. 1(250) = -4.11772110-1	ZPRS 247
1 (251) = 4.5772 69569C	- ZPRS 248
· 4(252)= -1.63991921961	ZPR\$ 249
1(293) = -1.06167/610-1	ZPRS 250
1(25A) = -4.25324419PO	7PRS 251
1 12551 = 2.73652736P61	ZPRS 252
A(256) = -3.46601734061	ZPRS 253
	ZPRS 254
1(258) = -1.6714C494N&1	ZPRS 255
	7PRS 256
4(260)= -2.55101207062	ZPRS 257
167411=" 8.220474n1062	ZPRS 259
1(242) = 2.132/913#161	ZPRS 259
1(243)==3.407/56/5062	ZPRS-260
4(26A) = -1.600663C#DR3	ZPRS 261
14(265)= 3.6227C189062	7PRS 262
1(266)= ~2.4091522AD62	ZPRS 263
1(247)= 3,47907402052	ZPRS 244
4(269) = -2.30078632062	ZPRS 245
	ZPRS 266
112701= -1.24624267064	ZPRS 267
	ZPRS 268
A(272) = HF.870F289A963	ZPRS 269
1(273) = -2.3100646DEA	ZPPS 270
A(274)= →1.3259k99A7R3	ZPRS 271
1[774]=- [.91926304463	7PRS 272
4/276) =2.19638114DQ3	7PRS 273
MTTTT1(277) = 11.2103/306063	ZPRS 274
#(279)* +2.095729130K4	ZPRS 275
16770)= -6.101070000064	ZPRS 276
11790) = -5.66F71622062 •	ZPRS 277
4(28))= -2.49870747064	ZPRS 278
AC2920* -1.11802473065	ZPPS 279
	- ZPRS 280
THE FETTING USED IN OFTERPINING THE SHAPE FACTOR FOR	ZPPS ZFI
CAL GULATING LAMINAR INDUCED-DRAG COEFFICIENT. USED IN SUB-	- ZPRS 282
	ZPR5 283
0121311:2722717111100	ZPRS-284
1{296}-1×332202280-1	ZPRS 265
	ZPRS-2Fe
40 2 44 ) #1 #5 2 444 52n-1	ZPRS ZET
	ZPRS 268
117791-1-9241593AD-1	ZPRS 289
	ZPP 5 250-
4(270) =- 1.13207402C-1	2PRS 251
No. of the second secon	ZPRS 252-
NO REPORTED TO THE PROPERTY OF LABOUR TO SEE THE TRANSPORT OF THE PROPERTY OF	ZPRS 243
WALL TO THE TOTAL TO THE TOTAL PROPERTY OF T	- ZPRS 254-
The state of the s	ZPRS 295
14(101)1021-1020-	ZPRS 246
#( 102) =- 3. 0*7622ncc2	ZPP\$ 257
ACSOSSES ACCORDANCE CONTRACTOR OF THE PROPERTY	ZPPS 258
103140men1.p= (-10714	S Market To A service

```
113051#-9.#9#78#ng --
                                                                                                                                                   ZPRS 300
   A(304)=0.265414P&0A
                                                                                                                                                   ZPRS 3CI
   117071# 1.207#050564
                                                                                                                                                   ZPPS
                                                                                                                                                              3C2
  //30°)*2.1/03718602
                                                                                                                                                   ZPR$ 303
   ላ{ ዓርም) ≈ 1. በጣልዓልታክዚርል
                                                                                                                                                   7 PRS 304
  A(310)=4.0713020602
                                                                                                                                                   ZPRS 3C5
  4(311)=2.13941271
                                                                                                                                                   ZPMS
                                                                                                                                                             305
                                                                                                                                                   ZPPS 3C7
         PRESSURE DRAG CREEFICIENT FOR CONE HALF ANGLE GREATER THAN
                                                                                                                                                  ZPRS 3CB
                                                                                                                                                  ZPRS
                                                                                                                                                             309
         20 AND LESS THAN DO FOUND TO 40 DEGREES.
                                                                                Total Section 1997 Section 1997
                                                                                                    USED IN SUPERCUTINE
                                                                                                                                                  ZPHS
                                                                                                                                                             3 10
         ne then.
                                                                                                                                                  ZPPS 311
  1(312)=
                   3. P975 12900C
                                                                                                                                                  ZPRS
                                                                                                                                                            312
  A(313) = -5.918830F10C
                                                                                                                                                  IPPS
                                                                                                                                                             313
  #(316) = 2.7339701001
                                                                                                                                                  ZPRS 314
  16315)= -3.748113300
16316)= -3.705545881
                                                                                                                                                  ZORS
                                                                                                                                                             315
                                                                                                                                                  ZPRS
                                                                                                                                                             316
  A(317)= -1.21340994062
                                                                                                                                                  ZPRS
  Af-3191= 1.0532C1730&1
                                                                                                                                                            317
                                                                                                                                                  ZPF S
                                                                                                                                                            319
  4(310) = -5.0025#3440K1
                                                                                                                                                             319
  4(320)= 1.*0358725062
                                                                                                                                                  ZPRS - 320
  4[321]= -2.00301099052
                                                                                                                                                  ZPRS
                                                                                                                                                            321
  A(372)= 4.3788CA87682
                                                                                                                                                 ZPRS
                                                                                                                                                            322
  A(3231= -2.047=#317963
                                                                                                                                                  ZPRS 323
  1(324)= '3.370014150K2
                                                                                                                                                 ZPRS
                                                                                                                                                            324
  4(32")= -3.00007"2"063
                                                                                                                                                 ZPRS
                                                                                                                                                            325
  413241=~~0.700244#eng3
                                                                                                                                                 ZPRS 326
  113271 = -0.E50A7071062
                                                                                                                                                 7PAS
                                                                                                                                                           327
  163281= 'A. 93934839063
                                                                                                                                                 ZPRS
                                                                                                                                                            328 .
  11 7201= -1.27345999984
                                                                                                                                                 ZPRS 329
  ZPRS 130
  4(331)= ~1.021 4C#[F&4
                                                                                                                                                 ZPRS
                                                                                                                                                           331
  814321mm 4.4544211464-
                                                                                                                                                 ZPR$ 322
  A(333) = ~0.6076 f6/ 4053
                                                                                                                                                 ZPRS
                                                                                                                                                           323
  1(331)= '7.720'727F066
                                                                                                                                                 ZPRS
                                                                                                                                                           324
 A(1351# -2.50134187065
                                                                                                                                                 ZPRS 335
 A(33A) = "2.74036121064
                                                                                                                                                 ZPRS 336
  4[337]= -1.3187469888
                                                                                                                                                 I PRS
                                                                                                                                                           327
 A(137) = 3.4007FCAARE*
                                                                                                                                                 ZPR5 328
  1(339) = -2. espetagrage
                                                                                                                                                 ZPRS 339
 A(340)= 7.60979058986
                                                                                                                                                 ZPRS
                                                                                                                                                           340
 Albella -3. GOPTCLARDES
                                                                                                                                                 ZPRS 341
 A(347)***-P. #103#34###
                                                                                                                                                 2PRS 342
  A1363) = -4.4281 58085
                                                                                                                                                 ZPRS 343
 -13461= 2.000=052066
                                                                                                                                                 2005 344
 A(34") = -2.4059187065
                                                                                                                                                 ZPRS
"A(344)* 1.13004333066
A(347)* -2.93164937066
                                                                                                                                                           345
                                                                                                                                                 ZP#5 346
                                                                                                                                                 ZPR$ 347
           CONFESCIENTS USED IN DETERMINING THE RATIO COP WITH ANGLE
                                                                                                                                                 ZPRS 348
                                                                                                                                                 ZPR$ 349
       OF ATTACK FEFFCTS/ COP FOR ANGLE OF ATTACK OF ZERO, WHERE
                                                                                                                                                 ZPRS 350
       THE ABSOLUTE VALUE OF THE ANGLE OF ATTACK IS GREATER THAN 4 LESS THAN OR FOUND TO DEGREES. IF THE AUSCLUTE VALUE OF
                                                                                                                                          ANDZPRS
                                                                                                                                                           351
                                                                                                                                                 ZPPS 352
       ALPHA IS GREATER THAN OC DEGREES THEN ALPHA IS SET FOUAL TO 40.
                                                                                                                                                7PRS 353
       USCO IN SURPCIPTING OF AGED.
                                                                                                                                                 /PHS
                                                                                                                                                           354
 *(3/*)= -0.07A061040-1
                                                                                                                                                 /PRS 355
 $ { (AP) =
                    3,470436360-1
                                                                                                                                                 ZPRS 356
 4 ( 1497)) a
                    1.2479244390
                                                                                                                                                 ZPP4 347
                  וייחר יויך מחמד ....
 A [ 4" ] } #
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                  A. 147747APD
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4(354)* 1.001031CC	$\mathbf{D}$	ZPOS :	
**************************************	Ω	ZPRS :	362 ** 363
			364
413881 - 1.374111270-1	$\mathcal{O}$		365
*	.F		346" "" 367
1.527464050C			368 -
. A(362)= -1.50246052061	F3 .	ZPP5	
	——————————————————————————————————————	ZPRS	
A(34A)= -1.94905005D61	<u> </u>		371 372
1.000986434061 4(365)= 1.1043676434061			373
			374
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A(870) = -1.89181222751			378
A13721- 3.4347480700			379
			360
A(376) = 2.697710 CORE	AND PRODUCT OF THE OWN CONTRACTOR CONTRACTOR OF THE PROPERTY WAS A PRODUCT OF THE PROPERTY OF		381 382 -
#(376) = 1.1041C322761	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ZPRS	
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A(378) = -3.36511595P41	Marie Control of the	***	365
	14 The second se		367
A.PIRZZIOZC 	and the same and the same of t		388
1(382)# 4.2508F90*DEL	20	7 PR S	340
-1.3447777FFG1 -	The second secon		390 391
	N CALCULATES THE STRONG INTERACTION		392
C COME CONFERENT FOR	CONF HALF ARGLE GREATER THAN OR EQUAL TO		393
	SUPECULING BUCCUTHOUSE OF SECTION		394
4 3 3 3 4 - 1 - 1 1 3 7 1 4 7 5 7 1	The state of the s	ZPRS	de set se
1(394)-1.2540005700		at its or as	347
	12 at the superior of the control of	"ZPRS"	-
4(308) 4. #7944 28EP-2		ZPRS	399
4(300) =A.495299510-A		Mr. of the let	4C1
		77 1. 1. 1. 1.	4C2
A(7771 =4.977418*40C	. 37		403
		the state of the	405
4(395)43.443747eth-1		Ann 41 1 and	466
1(194)=2.14499EAD-2		ZPPS	4 C7
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C ALLZON USED IN CHASE	UTINE DRAGED TO CALCULATE TURBULENT SKIN	ZPRS	413
11'CO1 +- 0. 30347'CO2	CIENT.	· ¿PRS	4.15
		PPS	4 16
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AF 4031-0.1204-FE01		ZPP S	- IF 4
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	A/AOC 1-0 61120C-02		
	A(40° )=0. *1120C-02	ZPRS	420
	1140A 14-0.9637FD-0A	ZPPS	421
	A140*1#0. 57444PR03 ************************************	ZPRS	422
	A(403)=-0.39240N603	ZPRS	423
-18.0k mg	THE REPORT OF THE STREET WAS ASSESSED.	TPRS	
	A(410)=-0.196A1PE02	ZPPS	-
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	A14121#O. 8394FD- O1	ZPRS	
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	A14L41#-0.2097CPR04	ZPRS	
		ZPRS	
	TO A CALL DE CONTRACTOR CONTRACTO	Sock	
	14414-0.374910603	ZPRS	431
	1 814171=0.615560507 norm =	ZPRS	432
	V(VIA)=-0.4(5/40001	ZPRS	423
*(*)	- Attitude 24411000 - Time - T	ZPRS	424
	1(4291# -0.\$0452P-02	ZPRS	425
	The first transfer which is not the second of the second o	/PPS	
r	COFFEICIFULS USED IN DETERMINING THE RATIO COP WITH ANGLE	ZPRS	
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r	THE ABSOLUTE VALUE OF ALPHA IS LESS THAN 4 DEGREES AND CREATER	2000	430
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	\(\langle 2.7004\c370 4	Shuz	443
	1 A1/241 • 1 A23205 70300 -650 · · · · · · · · · · · · · · · · · · ·	ZPP.S	464
	410 Selm 4 . 45.0 c3.0 ul .1	ZPRS	445
1 (884) (4)	311.541m5*011(4.440001	ZPRS	446 -
	V(\ 5.4) = 1 * V0434V004-5	ZPRS	447
1.0	* 41'201 = -4.21246060p.4:	ZPRS	448 .
	f(/201= -3.644150/50-2	ZPPS	
	*#15301# * 3.4005646P.m2 ******************* *	ZPPS	
	6(A31)= -3.676999120-3	ZPRS	
1 10 10 10	1// 321 m. a. anij 4331n	ZPRS	
	11/331* 1.499274420-1	ZPRS	
1	16'361m -3.610027160:2" ************************************	ZPRS	
	11/351× 1.932346190.3	ZPES	1 11 11
11 60 41 6	11'361= -2.731*C*2n-4	de de de	
	11/371= -6.7496696100	ZPRS	
14000	A P A TOTAL	ZPRS	
	A(A-10) = -1.672522960-1	ZPRS	
HM 1 10 MH 10	***************************************	ZPRS	
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Herbert die en	14411= 1.07312C7CPC	ZPRS	
	**************************************	IPPS:	1 11 110
	1(6/3)* 3,970936590-2	ZPRS	
	1(////==-1:-005022*30-1	ZPRS	464
	11445) = -2.444C5050-1	ZPRS	465
	1/474= -2.44114630=2	ZPRS	466
	The state of the s	JPRS	467
- H - 1	" ALTON B. S. S. 1983 D. 4 Same and the management of the control	ZPRS	468
	014603m 1*420331030El .	ZPRS	469
	** *( ``CO) == =6. 96296663R@==================================		470
	vi.urim v*IvivSw3mD*I	7PRS	471
- 110-1404 - 610-01 (H. 144 DA)	314E21=-41.03*4140EF +2	7995	472
	1(421= -3.4200144600	7000	472
	///// ment 1.1450ca7ang.secomenomenomenomenomenomenomenomenomenomen	1000	474
	MARGIE -0.0771CAAGO-2		
D. D No pai	617.561 mm 2.54 4028430 /5	ZPRS	474
•	The second secon	LPKY	4.40
*	COEFFICIENTS USED IN DETERMINING THE BLUNTNESS CORRECTION	ZPRS	. 4. 1.
,	TO THE CRIM EDICTION POLE ECPERATION IN ALUMINESS CHRRECTIES	ZPRS	
	TO THE SKIN ERICTION PRAG COREFICIENT IN SUBROUTINE PRAGOC.	ZPRS	470

COD A ULIMITALECE DATTOCOCATED-THAN OF ECHAL TECH S	ZPRS	AAA	w 1
FOR A HLUNTNESS RATIO-GREATER THAN OR EQUAL-TC-0.2.			
1(457) # 9.095400AID-C1	ZPRS		
114531 = 1.33953#AA9-GR	7PRS		•
A(450) =-3.39247271D-CC	ZPPS	463	
**************************************	ZPRS	464	**
\$ { { { { {1.5}} } } = 1.3 + C { { {1.970}} - 1.1	ZPRS	465	
*** * A(A52) * * ** SPRC1*23DCC0	ZPRS	486	1 -
A(463) =-6.711434P076C0	ZPRS	487	
A(186) = 2.677340290600	-ZPRS	428	,
11 / 4 C 1 2	ZPRS		
1. 44461 # 1.4947323CE-02-1	ZPRS		
A(^67) *-7.7716022706C1	ZPRS		•
A(A50) = A. 945C508608C1	ZPRS		
8(469) *-2.1132375406C1	ZPRS		
A(470) = 2.634 P21130G00	- 7000	454	
A(471) =-1.112296100-01	ZPRS	ACE	
	ZPRS		
ET FOR A BLUNTHESS RATIO LESS THAN 0.2.	ZPRS		
4(^72) = 2.1401907706C0	ZPRS		
4(674) = 3.809546520-C1	ZPRS		erajan utaran
	"ZPRS		
4(474) = 2.212652750-C3	ZPRS		and the sa
4(377) =-1.971 C73 5398C1	ZPRS		
# (6 (# ) # 1. # 1. # 20 # 5 3 % G1	The 3		
4(477) a-4.594561497600	ZPRS		
6(490) = 5.233621380+C1	ZPRS	-	
411017 =-2.05329 Fen-C2			
Aranz) = 2.985CA/337601	ZPRS		
\$15931 2.3113562806Cl	ZPHS	208	•
ALIMON BOOK ON THE CONTROL OF THE CO	ZPKS	204	
4 14 14 14 14 14 14 14 14 14 14 14 14 14	ZPRS	-	,
	ZPRS	511	
A(494) = 2.582C7660C-02	ZPRS -ZPRS	511 512	u <del>ga</del> ne <del>yaa</del> s
ATANNI + 2.582C76600-02 COMMERCIANTS USED IN CALCULATING BASE DRAG COEFFICIENT IN	ZPRS - ZPRS ZPRS	511 512 513	re <del>spec</del> atory <del>(posser</del> de
A(MAN) + 2.582C7660C-02  C COMPRESSIONS USED IN CALCULATING BASE DRAG COEFFICIENT IN COMPRESSIONS OF SURPOUTING DRAGEO.	ZPRS ZPRS ZPRS	511 512 513 514	omeno meno
A(MMS) = 2.582C7660C-02  C COMPRESCIENTS HISTORIN CALCULATING BASE DRAG COEFFICIENT IN COMPRESCIONAL	ZPRS ZPRS ZPRS -ZPRS ZPRS	511 512 513 514 515	- <del></del>
A(MMS) = 2.582C7660C-02  C COMPRESCIONTS USED IN CALCULATING BASE DRAG COEFFICIENT IN COMPRESCION OF THE PROPERTY OF THE PROPE	ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS	511 512 513 514 515 516	ONE OF SER
A(MMS) = 2.582C7660C-02  C COMPRESCIENTS HISTORIN CALCULATING BASE DRAG COEFFICIENT IN COMPRESCIONAL	ZPRS ZPRS ZPRS -ZPRS ZPRS	511 512 513 514 515	- MI
A(MMS) = 2.582C7660C-02  C COMPRESCIONTS USED IN CALCULATING BASE DRAG COEFFICIENT IN COMPRESCION OF THE PROPERTY OF THE PROPE	ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS	511 512 513 514 515 516	HERE
A(MMS) = 2.582C7660C-02  C COMPRESCIONTS HISTORIN CALCULATING BASE DRAG COEFFICIENT IN COMPRESCION OF THE PROPERTY OF THE PROP	ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS	511 512 513 514 515 516 517	He will
A(M94) + 2.582C7660C-02  C COMPOUTING DRAGCO.  C FOR FREE STREAM MACH NUMBER LESS THAN 7.	ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS	511 512 513 514 515 516 517 518	The second secon
A(M95) + 2.582C7660C-02  C COMPOUTING DRAGEO.  C FOR FREE STREAM MACH NUMBER LESS THAN 7.  A(M95) - 4.1127257600  A(M95) - 2.07395549661  A(M95) - 2.31947425761	ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS	511 512 513 514 515 516 517 519 520 521	officer (man)
A(M95) + 2.582C7660C-02  C COMPOUTING DRAGEO.  C FOR FREE STREAM MACH NUMBER LESS THAN 7.	ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS	511 512 513 514 515 516 517 519 520 521 522	The second of th
A(MAN) = 2.582C7660F-02  COMPRESSION OF THE CONTROL	ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS	511 512 513 514 515 517 519 520 521 523	The section of the se
A(MAN) = 2.582C7660C-02  COMPRESCIONS USED IN CALCULATING BASE DRAG COEFFICIENT IN SURROUTINE DRAGEO.  COMPRESCION WACH NUMBER LESS THAN 7.  COMPRESCION WACH NUMBER LESS THAN 7.  A(MAN) = 2.0739556760  A(MAN) = 2.0739556761  A(MAN) = 2.0739556761  A(MAN) = 2.07395676761  A(MAN) = 2.07397369082  A(MAN) = 3.13904376763	ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS	511 512 513 514 515 517 519 520 521 522 523	The second secon
A(MAN) = 2.582C7660F-02  COMPRESSION OF THE CONTROL	ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS	511 512 513 514 515 516 517 519 521 522 523 525 525	The second secon
A(MAN) = 2.582C7660C-02  COMPRESCIONS USED IN CALCULATING BASE DRAG COEFFICIENT IN SURROUTINE DRAGEO.  COMPRESCION WACH NUMBER LESS THAN 7.  COMPRESCION WACH NUMBER LESS THAN 7.  A(MAN) = 2.0739556760  A(MAN) = 2.0739556761  A(MAN) = 2.0739556761  A(MAN) = 2.07395676761  A(MAN) = 2.07397369082  A(MAN) = 3.13904376763	ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS	511 512 513 514 515 516 517 519 521 522 523 524 525 526	The second secon
A(MAN) = 2.582C7660C-02  COMMENT OF THE COMMENT OF	ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS	511 512 513 514 515 517 519 521 523 524 525 527	
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A(A9A) = 2.582C7660C-02  C COSPETCIENTS USED IN CALCULATING BASE DRAG COEFFICIENT IN  SUMPROUTINE DRAGEO.  C FOR ERRE STREAM MACH NUMBER LESS THAN 7.  A(A99) = 4.1127257600  A(A99) = 2.07395.64761  A(A91) = 2.545225761  A(A91) = 2.545225761  A(A91) = 2.545225761  A(A91) = 3.3933590082  A(A91) = 3.3933590082  A(A91) = 3.3904376763  A(A91) = 3.3905257062  A(A91) = 3.39052593764  C FOR ERRE STREAM MACH NUMBER GREATER THAN OR EQUAL TO 7.	ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS	511 512 513 514 515 517 519 521 523 525 527 528	
A(49-1 * 2.582(7660°-02  COMPRICIENTS USED IN CALCULATING BASE DRAG COEFFICIENT IN  SURROUTINE DRAGCO.  COMPRES STREAM MACH NUMBER LESS THAN 7.  A(97) * 3.04-6.21510-1  A(98) * 4.11272-7600  A(98) * 2.07394-44761  A(90) * 2.3194-745761  A(90) * 2.3194-745761  A(90) * 3.3933-74062  A(91) * 3.3933-74062  A(91) * 3.3933-74062  A(91) * 3.3933-74063  A(91) * 3.2944-75063  A(91) * 3.2944-75063  A(91) * 3.2944-75063  A(91) * 3.2944-75063  A(91) * 3.2970-74064-74063  A(91) * 3.2370-74064-74063  A(91) * 3.2370-74064-74064	ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS ZPRS	511 512 513 514 515 517 519 521 523 525 527 529 529	N HERT
A (44-1 = 2.582 C7660°-C2  C COMPRISTENTS USED IN CALCULATING BASE DRAG COEFFICIENT IN C SUPPRISTENT SUSED IN CALCULATING BASE DRAG COEFFICIENT IN C SUPPRISTENT SUSED IN CALCULATING BASE DRAG COEFFICIENT IN C SUPPRISTED IN CALCULATING BASE DRAG COEFFICIENT IN CALCULATION TO CALCULA	ZPRSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	5112 5113 5113 5115 5117 5119 5119 5119 5119 5119 5119	N HIM M. I
A 14941 = 2.582C7660°CZ  C COMPRICIENTS USED IN CALCULATING BASE DRAG COEFFICIENT IN  C SUPPORTINE DRAGCO.  FOR PREF STREAM WACH NUMBER LESS THAN 7.  A1499 = -4.11272F600  A1499 = -2.0739F64061  A1490 = -2.31947425061  A1490 = -2.31947425061  A1491 = 2.5652627961  A1492 = 3.3993F94062  A1493 = 1.9396426063  A14941 = 3.13904476663  A14941 = 3.13904476663  A14941 = 3.700482662  A14941 = 5.00007258364  C — FOR PREF STREAM MACH NUMBER GREATER THAN OR EQUAL TO 7.  A1991 = 3.2370F6200-1  A1991 = 2.24767826062  A1991 = 2.24767826062  A1991 = 2.24767826062	ZPRSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	5112 5113 5113 5115 5117 5119 5119 5119 5119 5119 5119	N HIM M. I
A ( 494) # 2, 582 C7660°C2  COMMITTING DRAGCO  A ( 490) # 2, 07395 64761  A ( 490) # 2, 07395 64761  A ( 490) # 2, 07395 64761  A ( 490) # 2, 452 25761  A ( 491) # 3, 4393 64762  A ( 491) # 3, 4393 64762  A ( 491) # 3, 1390 437623  A ( 491) # 3, 1390 437623  A ( 491) # 3, 1390 437623  A ( 491) # 3, 1390 647623  A ( 491) # 3, 2370 6270 C1  A ( 490) # 3, 2370 6270 C1  A ( 500) # 2, 2474 722762  A ( 501) # 3, 2370 6270 C1  A ( 501) # 3, 2373 3366 C61	ZPRSSZPRSSZZPRSZZPRSZZPRSZZPRSZZPRSZZPR	511234551551551551551551551551551551551551551	No. of the second
A (494) = 2.582(7660°C2  C	ZPRSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	511234551551551551551551551551551551551551551	No. of the second
A (494) = 2,582 C7660°-02  C	ZPRSSZPRSSZZPRSZZPRSZZPRSZZPRSZZPRSZZPR	511234551551551551551551551551551551551551551	No. of the second
A (494) = 2,582 (7660°-02  C	ZPRSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	51123455178901223455555555555555555555555555555555555	to the set of the set
### ### # 2.582C76600-02  ***COMMINITIAL DRAGEO.**  ***COMMINITIAL DRA	ZPRSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	5112345555555555555555555555555555555555	M tile in a compression in the c
A(49-1 * 2.582C76600-C2  COMPRECIENTS USED IN CALCULATING BASE DRAG COEFFICIENT IN SURPOUTINE DRAGED.  COMPRES STREAM WACH NUMBER LESS THAN 7.  C(07)* 3.075621510-1  A(491=4.12725600  A(491=2.3194742761  A(401=2.3194742761  A(401=2.3194742761  A(401=3.1390476763  A(401=3.1390476763  A(401=3.1390476763  A(401=3.1390476763  A(401=3.1390476763  A(401=3.1390476763  A(401=3.1390476762  A(401=3.1390476763  A(401=3.13904767663  A(401=3.1390476714064	ZPRSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	5112345517890122345555555555533455537	N UN MI
A(49-) * 2,582C7660°-C2  C	ZPRSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	5112345678901234567890123456789 512345678901234567890123456789	M. The second of

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PARKOX
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     "$URROUT] N# "ZR#40X"" - ..."
                                                                    ZREAD
     IMPLICIT REAL ** (A-M+ 1-Z)
                                                                    ZPEAD
                                                                    TREAC
                                                                    ZPEAC
          SURROUTIVE PREADX PROVINES THE INFORMATION ABOUT THE SIZE
                                                                    FREAD
        AND DIMENSION OF FACH INPUT VARIABLE IT REFERS TO. THIS
                                                                    ZREAD
      INCORNATION IS REQUIRED BY THE INPUT SUBROUTINE READIN. AT
                                                                    ZREAL
        LIBRARY ROUTINE.
                                                                    ZREAC
                                                                    ZREAC 10
                                                                    ZPEAD
                                                                         11
    IREAC
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      COMMIN ACPORTIST POPURELIZADI
                                                                    TREAC
                                                                         13
     "FORMON JORCSFC/ RIFRO-RZ-HB-ATKEN-AZ4-OX-ZNUS-CNE-DS8-XZPCE-X38-
                                                                    ZREAC
     LINDE-NET WE
                                                                    FREAL
                                                                         15
     FORMON INALTEGIPGSW. NALT.
                                                                    ZREAC 15
     COMMON INTERNET AKWINHOW, CRHOW, DELWH,
                                             TABL, CHCHEM, RHCSL.
                                                                    ZRFAC
                                                                         17
        ATO, ACON, ACON,
                      *** #21.822.823+
                                       CNUMB(169)
                                                                    ZPF 4D 18
     "" " " 10402 | 1011501 - 1021501
                                                                    TREAC 19
     ZREAC 70
     COMMON /SENSE/ISEN1. ISEN2
                                                                    ZPF 2C 21
    "COMMON/MIN/ALON (2017-UP (2017 "AMULT (2017 CALON(20), CTP(201
                                                                    ZREEC 22
     COMMON / I OPT/ IPR CC. IN. NCOAS, IPNT. 1EX, LIFIT. IRAND
                                                                    ZPEAT 23
     CONTROL PROPERTY PROPERTY " FAC." DELTA"""
                                                                    ZPEAC
     COMMUNICADATANEL X1201
                                                                    ZPEAC 25
     POWERT / TALS12/ FRNTALTA-101-ERNRTBEIDT-ERNUTBIBL
                                                                    ZREAC
                                                                         ...24
        ENTABLE 25. 91 ,PSTARL (C1, HSTARL 1251.
                                                                    IRFAT 27
    2 FYAML (12,11) THTTHL (11) FMC TOL(12), .....
                                                                 ZREAC 28.
           ZREAC 29
     ZREAC
                                                                         20
     15PE401.GS. GSP.GTP.GSS.GTT.GSR.FZZ.FP.FR.FC.E.PZZ.TO.RS.SL.ZZZ.
                                                                    ZPEAC 31
                                                                   "ZREAC 32
     治疗药以成果。可以以上的发现多个企业工程等
                                                                    ZREFC
     HATTING - HERD COMMON IS HETNE SHARED BY DAVDON AND ROSERK-GRAM - ZREAC 34
                                                                    ZREAC
     COMMONITATINGKIN, K. ALMEZOT, UBEFOT AKEZOT AFKK -----
                                                                   ZREAT
     COMMON JAULTY SMOUTESAL
                                                                    ZREAC 37
     COMMUNI SIGNATA TOUT 15014 TOURISCH
                                                                    ZAFAE
     COMMOTIONS JOYECT (201, MPF , LREC
                                                                    ZRFAC
      COMMON YCHAKEY PETAT, FROT, FROT, FROS, PHIL, PHIZ, PHIS, SIGNLE, STORLE, ZREAC 40
     151GAL 3. TANL, TANZ, TANI, WEALT, WEVALT, IND. I WAKE, I WPRAT
                                                                    ZREAC 41
     COSTON DOCUME NECCUR
                                                                    ZREAC 42
                                                                    ZREAC 43
                                                                    ZREAC-44
      DIMENSION OCCURI4000), NCCCURI30)
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      ZREAC 46
      714445104 BCHL14401.8CHL24401.8CHL34401.8CHR14401.8CHR24401
                                                                    ZREAC 47
     114545 104 TCH 1 (40) . TCHL2 (40) . TCHL 3 (40) . TCHR1 (40) . TCHR2 (40) -
                                                                    ZREAC 48
      STHEMS I'M BETARION - MILLICH - PHI 211CH - PHI 3 (10) - MKALT(1C)-
                                                                    ZREAR 49
                                                                   -- ZREAC-50
      COMPUSTON SWEST FOLLTONICOL. TCD (40) TCV(40)
                                                                    ZREAC . 51
      ZREAC
      PTPF15TON 54L1[40]+54L2[40]+54L3[40]+54R1[40]+54R2[40]
                                                                    ZREAC
      AT YEART ON ACHRECACT METERLATED LOVELED HIVE ISOT HILLOT LOFT 903
                                                                   * ZOFAC
      ATPENSION TOWATCHOS, TPLCT(140), VOGPLT(140), VPLOT(160)
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                       --- WEIFIT-01, WESPITEO, WESPITEO, WRIPITHOS
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      CONTYAL FACE (OCCUPIEDAD), COUNT
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      FOUTVALENCE (PCCHR(11571), AA
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      POUTVALENCE
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                   (POCUPIOSSEL), BOWPL 'P
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                   (PCCUR(05341), RCWR2)
(PCCUR(055210, RCWR3)
      FOUTVALENCE
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      FOUTVALENCE
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      CHITAVENCE
                   tercupto40211. BCV
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      FOR IVAL FACE
                   TPCCUPECGEALL, BETAPLY
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      PRITYALFNOF
                   (PCCUPITIANT), DVL
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      FOUTVALENCE
                   (PCCUPILIAGT), PVH
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      FOUTVM FNCT
                   INCCIMIONALI. H
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      EDUTYMENCE (PCCUP(C4921), 58
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      COUTVALENCE
                   (PCCUR (07041).
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      CONTIAVENCE
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       CONTACTENCE
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       FRUTVALENCE
                   (PCCUFTOQ4711, VOGPLT)
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                   recoverations, with
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                   (PCCUPICOPOLI). WALP
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       POUTVALENCE (POPURIOOLET). JPLCT 1
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      FOUTVALENCE (TOCCURIOD314), TOBL
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       FOUTVMLENCE
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       POUTVALENCE
                   CINCCURING BOIL TREE
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       COUITVALENCE CIPCCUPLODEDES. MORE
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       FOUTVALENCE (INCCURTODOOLL -NCCMOVE
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       FOUTVALENCE (INCOMPTIONOL), NOP 1
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       FOUTVALENCE RICCORRESORALL, NOV
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	N THE REAL PROPERTY SHOULD SELECT SEL	w to bear extrement of a little of the electric time and electrical process to the electric e	- ZRE #C120
T;			ZREAC121
		# # # # # # # # # # # # # # # # # # #	7RE#C122
	CALL SETUPEPHAR	. P. ACCE - 1401	ZREAC123
Mr. b . P.131-4 1988	- CALL STYUP "LANCON""	THE RESIDENCE OF THE PARTY OF T	ZRE #C124
	CALL STTUP LINKS	*,8,AKW)	ZREAC125
4 - 1 1888	CHAIL STOR THAT	ALCH+20)	- ZREAC126
	CALL STUPERHAMULT	. R. AMUL T. 20)	ZRF#0127
	and the second s	The state of the s	7RF#1128
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	FALL SETUP ITACEN	1.F.RCCN)	SKERLTST
h 8 H	CALL SETUPIONALY	.P. PCV.(0)	ZREAD132
	CALL SETUPIANDENLL	.P.PCWL1.401	TE ERMY 32
HER BURGET T   18	- PALL CETUP! BUREAL 2		TREAD134
	CALL SETUPIENBOALS	* 9 * PC WL 3 * 401	ZREACT32
MIT NO.	- CALL SETUDIALINCHTE		ZREACLS6
	CALL SETUPINHUCLES	. P. P. WP 2 - 401	ZREPC127
NATIONAL METERS	TALL SETUPTAHACKES	a bCMb3' vC)	ZRFAC138
	CALL SETUP SHRETAPI		ZREAC139
legging   report resorts	THE SETUPINHAFTS	The same of the sa	ZREFC140
	C.LL CETHOLOHRTHE	y .n.nTWFM)	ZRF #0141
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	CALL SETHOLPHAZ	, , , 92)	ZREZC143
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	CALL SCTUP (*AZI	*, #, 4, 211	ZREAC145
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	PALL CETHO CHRP?	1.8.0230	ZRF#C147
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	CALL SCTHALANCE	THE REL	
	CALL SPEND CACMEMS	* * * * CNUMB * 1690	ZRFACLEB
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4 4 8 8 8	CALL SETUPING THE TP	***CTP*209	
	tara and the same of the same		ZRE#C156
In this	PHIL SPTUPERHAPELTA	***PELTA	DREACTOR
			ZREACILES
	CALL TETUPENHOELX	.9.PF1 K. 20)	ZREAC160
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	CALL SETUPINHOSA	PARTIES AND	
- Commercia	CBGT- CEARD I ALL DAT	The state of the s	ZREAC163
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	FALL SETUPEPHON	, 9, (PX)	ZRF#C166
	ayan <del>adam ayan 1 anan 1 yanan 1 yan</del> a 1 mayan 1 manan 1 1 may 1 dalama	AND THE RESIDENCE OF THE PARTY	ZREFCIET
	CALL SETUP (*FMCT)	IL P.P.EMCTRL.121	ZREWCIER -
100 M 100 M		11	ZRE#C169
	CALL SETUP (**CKP)	N 1,8 /PPNPTB-/101	ZRE#C170
Sept For Height		P. P. PROPRIES	2RFW0171
	CALL STOUP I PERKUT		ZRF#C172
Marcol and		The state of the s	ZPFZC173
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	The Control of Control	. O. FAC	ZREUCA 75
	FALL SETUP (PHF 1C		ZRE 20176
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or manufactured by \$100.00	SETTIPE ONE OUT	プロール (新山野田内堂) + ローロー Head Market Art Art Art Art Art Art Art Art Art Ar	THE T. L. P. LEWIS CO., LANSING
	CHILL SETTIOT ONE BO		ZPE#C179

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ZREAD180 :
CALL SCTUPERHA
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CALL SETUP (SHIPH ....
                       "R, HH, "I KOCT"
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CALL SETUP ( MSTABL
                       * + 8 + HSTABL + 25)
                                                                        ZREACTES
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CALL SETUPERHICEM
                       . 4. ICCM, 2001
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CALL SETUPTOHITHE
                       AGATORE 1"
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CALL SCHUPT PHIONO
                         +4+ TD1+801
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LVEF . LLAAT OB CONTOC.
                          +4+TD2+ 501
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CALL SETUPIPHIEX
                         . 4. IFX )
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CALL SETUPERHIGEH
                       * 4 . TGCH . 2C1
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                       .4. TGDL ,201
CALL SETUP[PHIGH
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                       4. IND
CALL SETUPEPHEN
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CALL STTUP CITNE
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CALL SETUPIONINGS
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                       A TOP, POI
TAIL STUPE ONTOP
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CALL SETUP PHIPHT
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                         . A. I PANT
CAEL STTUPLEHIPPIC
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CALL STUPEPHIRMS
                         . C. TO MIND
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CALL SETUPIPHIREE
                       . 4. IRFF
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TALL STUDIPHISEML
                       * 4 FTSENIA ...
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CALL SETUP (PHISEN2
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CALL SETUP ( SHIWAKE
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 CALL SETUPIONINPRNT
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CALL SETUPIANK
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TALL SETUPERHLINIT
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TALL SETUPEAULPENT
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CALL SETUP PHLRED
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CALL SETUPICHMORE
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CALL SETUPTAHNALT
                      · CONTETT
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TALL STUDIERINGERON
                       4-NOCMDN-801
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CALL SETUPIENNOONS
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CALL SETUPITAMNOP-
                        4. KEPI
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CALL SETUPIPHHADERINA
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CALL SEAMORAHMONGH
                       "4" KOVOH).
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CALL STEUDININPA
                       CANDAD
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                       A NPV INCT
TALL STRUPE SHIPLY
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TALL SETUPIPHOVECT
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CALL SETUPICAHPEC
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 CULT SETHOLDHOHIT
                        POPHIL DICH
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 CALL SETUPURHPHTS
                         *E PHT2 .10)
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 CALL SETUPICHELTS
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CALL STITTER SHPPIEND
                         PE PRMNO
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TALL STTUP CIPHESL
                      PHRIPPLI
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CHIL SETUP CHPHPH.
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CALL SETUP TERSTABL
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CVIT SALIBULIANA
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 CALL SPITTIPE THIS P.
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 CAFF CELHOLISHEL
                          " " " " " NO!
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 CALL SETUPT THE TONE I
                         . P. STONULL
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 CILL SETHPLEHSTONLS
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CALL SETUPIONES TONES TO STONES	ZREAC241
CALL SETUPERHSMULT #8,5MULT,251	ZRE/C242
CALE SETUPIANSES	ZREAC243
CALL SETUP (9HSV +4,SV,4C)	ZREAC244
CALL SETUP (915WL1	ZREAC245
CALL SETUPIBHSWLZ , 8, SWL2,4C)	ZREAD246
CALL SETUPERHSNES R. SNES. SCI	ZREAC247
CALL SELIBITATION TO SAN TARGET	ZREAC248
CVET SCANLEHEMAS	ZREAC249
CALL SETUP(BIISHP3 .8, SHR7.4C)	ZREAC250
TABLE TO TABLE	ZREAC251
CALL SETUP ( TARL . P. TARL)	ZREAD252
CALL SETUP (SHT BUT . F. TAUL)	ZREAC253
CALL SETUP (PHT AU2 , F. TAU2)	ZREAC254
CALL SPTUP (SHTCE , 2, TGB, 40)	ZREAC255
The second secon	7RE#C256
CALL SETUP (PHTCV , 9. TCV, 60)	ZREAC257
CILL STUPE THICKLI TRATCHLIAO)	TREADZES
CALL SCTUPERHTCHL2 ,8,TChL2,40)	ZREAC250
CALL STUP (PHTCHL) (817CHL3740)	ZRE4C260
CALL SETUP (OHTCHR1 , 8, TCWP1, 40)	ZRE#0261
	TREAC262
CALL SETUPIONITOWRS . S. TOWRS. CO	ZRE40263
- PALL STUD COTHTON TO PATHTIBLE . 111	ZREAC265
CALL SETUP (SHTPLOT , S, TPLOT, 160)	ZREAC266
the state of the s	ZRE#C267
TALL STUDEPHUP ,9, UP.20)	ZREACZ68
the state of the s	ZPE/C269
TALL STUP ( OHVPLOT , 9, VPLOT, 160)	ZRE 40270
CALL SETUPISHVORPLT - T. VOGPLT - 14G1	7R+#C271
	· · · / PF # F 272
CALL PRINCIPLIANT . P. WKALT. 171	/RF/1273
CALL CUTOP CANNETS . A.METP.1/0)	- ZREAC274
	ZREAC275
	ZREAC276
	ZRFAC277
CALL SETUP ( SHAP IP . P. WHIP+160)	ZREAC278
CALL SETUPIBHHERP NO 3P.140)	ZRE/C279
CALL SETUPERHUSTART FEWSTART	ZREADZEO
	ZRFACZE1
CALL STTUP ( SHECK E. XCCM . 200)	- ZRF#C262
TALL CETUP LENGTABL ".P.XYZTDL.I.	ZRFAC283
- CALL-SCTUPLANX280C C. X2PCD )	7REAC264
CALL SETUP (BHX38 .8.X3B)	ZREADZES
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CALL SETUR ("YNTARL ".A,XYZTRL(1,2). 11)	TREACSES
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CALL SCHIPPERT . 7. ZPIOT. 160)	78F4D292
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PASS1	COMP"	BLANK + E + S420 LOOK FOR A FIELD TERMINATOR	EAD	5
Te have	COMP	EQ026 • E • S420	EAD.	5
	COMP	EQ029+E+S420	EAD	5
	COMP	LP026.E.S419	EAD	5
	COMP	LP029.E.5419	EAD	- 5
EITHER	8	MOREL	EAD.	5
EXTRA	BXLE		EAD	
ing and the same of	8	SA20	EAD	5
\$405	MVI	EITHER . 1 . X-00+ EIGHT CHARACTERS HAVE BEEN SEEN	EAD	5
	MVI	5420.1.x-F0- MVC1.1.7	EAD	
	IVM	MVC1-1-7	EAD	
	8	PASS1  LPAREN 1 - X-FO- LEFT PARENTHESIS TERMINATES NAME	EAD	5
5419	MVI	LPAREN . 1 . X-FO- LEFT PARENTHESIS TERMINATES NAME	EAD	5
5420	NOP	\$4200	EAD	5
	LR	RW+RC	EAD	5
	\$R	RW.RT	EAD	
e upper en . en	S	RW • ONE	EAD	5
The state	STC	RW+MVC1+1	EAD	
54200	MVC "	DB18+BLANKS	EAD	5
MVC1	MVC	D810*+01RT#	EAD	
LAGOOL	LH "	RT.NUMTAB LOOK FOR VARIABLE NAME IN TABLE	EAD	
	L	RW.STABLE	EAD	
LP2	CLC	- 0)8.RW*.D8	EAD	
i jo	BE	FOUND	EAD	
	LA	RW+2810+RW+	EAD	
	BCT	RT+LP2	EAD	

DO AND FOLDO MATERIA DO RATA HADO DE SA FILODO DE RATA DE CATA DO DEL C

FØUND	L ST	ERRØR2 RT+8)0+RW* NAME HAS BEEN FØUND RT+NADD	EAD EAD	593 -594
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	****	man in a case la	TIE TRUE CHECK FOR -TRUE-	EAD	
1.0	THE REAL PROPERTY.	F 162 181 105			
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		-N.NE.ERROR FRROR IF NOT NO.		
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APPENDIX II - Overlay Information and Other Pertinent

Information for running the Optimum Decoy

Design Program

#### SET UP OF BINARIES FOR THE OVERLAY

Program 2542 has been run successfully on the OS65 at Avco using version 14 of the operating system.

All binaries whose names do not follow one of the OVERLAY cards should be first in order in the binary deck.

These binaries should then be followed by the following six overlay segments. The names of the binaries included in a particular segment follow the overlay card for that segment.

#### OVERLAY AL

READIT

SR2490

ZPRM

ZPR6

ZREADX

OVERLAY AL

VIXEN

OVERLAY AL

ADD

INFCOF

INTGRL

WESTER

### OVERLAY A2

DAVDØN

READY

# OVERLAY A2

GIMAX

MIMAX

## OVERLAY AZ

GRAM

RØSBRK

#### OTHER INFORMATION

- 1.0 A Preset Deck is needed to run the program.
- 2.0 The subroutine LA000000 is written in Assembly Language.
- 3.0 The input quantity IOP(76) should be set to 1 at AVCO and to 0 at Aerospace.
- 4.0 The dummy subroutine PLT must be removed at Aerospace.
- 5.0 The dummy subroutines ENDJOB, EZPLOT, FRAMEV, IDFRMV, and PLTND must be removed at AVCO.